

With plates

P O M E T's
GENERAL HISTORY
O F
D R U G S:

With what is farther observ'd by *Lemery, Tournefort,*
and others on the same Subjects.

BOOK I.
Of ANIMALS.

P R E F A C E.

The Dominion which the Creator has given to Man over all Kinds of Animals of the Earth, Air, or Sea; and the Excellence of the natural Gifts, which He has given him above all other Things which have Life, have not hindered Naturalists who treat of Animals, from comprising Man, at least so far as concerns the Body, in the number of them. And the Experience, which Physicians in different Ages have had of the good Effects, which the Parts, or Excrements, of a dead or living human Body have had in the healing its like in many Diseases, have engaged them often rather to have recourse to it, than to what might be had of Beasts, and to give the proper Descriptions and Preparations of the Parts of the human Body. And most Authors hitherto have, in treating of Animals, and the Preparations made from them for the Use of Physick, begun with the Description of the human Body, either entire, or in its Parts, and have not spoken of other Animals till after their Lord.

The same Reasons have also engaged me to imitate them here, and to place what I have to relate concerning other Animals, after what relates to him who has the Command and Disposal of them.

I shall here decline treating of the great Lights, Knowledge, and Understanding, which the Creator has bestowed on Man, and confine myself wholly to the Matter of the Body, and to the Things which may be found in it, living or dead, proper for the Relief of others in their Sickneses, and for the prolonging or preserving their Days in Health, and to keep myself within the Bounds of my intended Work, and follow the Design I have here, of treating of only such Things, as the Animal, Vegetable, and Mineral World furnish us with, under the Name and Office of Drugs, I judge nothing can be more proper than to begin this Part of the Work with treating of Mummies, which contain in them nearly all the Parts of the human Body.

I Of Mummies.

Poinet.

AMONGST all the Testimonies of Respect, which Antiquity paid to the Bodies of the Deceas'd, that of a decent Burial was always in the most Esteem; by which last and pious Acknowledgment, they were willing to honour and preserve the Memory of those whose Actions had recommended them in their Life-time, and performed a Work of Charity, tending to the Consolation of the Living, and the Peace and Repose of the Dead. The wonderful Pyramids of *Egypt*, of which I shall speak by and by; the Obelisks engrav'd and carv'd with such Pains and Industry; the *Mausoleums*; and, in short, all the rich and pompous Monuments, found throughout the World, are certain Proofs of the Piety and Regard of the Antients towards the Dead. But as there are several different Nations and different Religions, so there are particular Customs in paying their last Respect to the Deceas'd. All the Elements have been Partakers of the Spoils of the Dead, the Earth not having been thought sufficient alone to take care of the Relicks.

History informs us, that the Fire burnt and consum'd the Bodies of the *Greeks*, *Romans*, *Gauls*, *Germans*, and several other Nations: That the People of *Colchis* hung their dead Bodies in the Air, upon the Branches of Trees: That the old Inhabitants of the *North* found their Graves at the Bottom of the Ocean, as the *Æthiopians* in the Currents of their Rivers; and that the People of the frozen *Scythia* were buried in the Snow. But the most ancient Kind of Burial was that of interring the Bodies, and we have Reason to believe, that *Adam* himself was buried after this Manner.

It was from the *Jews* that the *Christians* learned the Interment of the Dead, making Pits or Graves in subterraneous and retired Places, call'd Tombs, or Catacombs, and most usually Cemeteries, or Dormitories, that is, sleeping Places: But before Burial they were embalm'd after a very curious and surprizing Manner, as shall be shewn. The first and most costly Kind of Embalming was valued at a Talent of Silver, which may be computed at about Eight hundred and fifty Livres, at that time of Day; but reckon'd now would amount to Eight thousand Livres, or five hundred Pounds Sterling and upwards.

This Embalming was us'd to none but Persons of the first Quality. Three People were us'd to be employed in the Operation; one was a Kind of Overseer, who marked out such

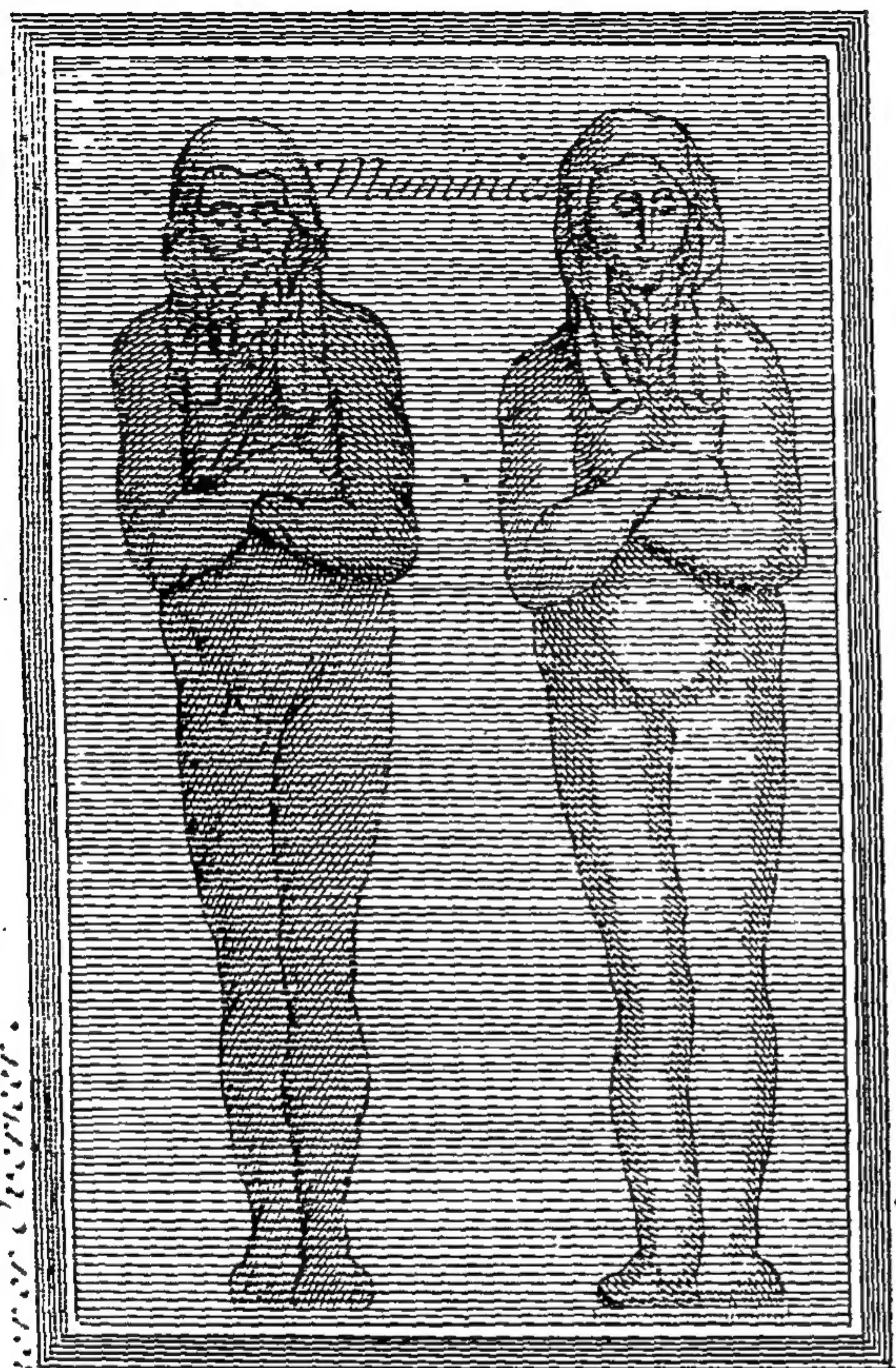
Places of the Body as were to be opened to take out the Bowels. The next was a Dissector, who, with a Knife made of an *Ethiopian Stone*, cut the Flesh as much as was necessary, and as the Law would permit, and immediately after fled away with all the Expedition imaginable; because it was the Custom of the Relations and the Domesticks to pursue the Dissector with Stones, and do him all the Injuries they could, treating him as an impious Wretch, and the worst of Men. After this Operation, the *Embalmers*, who were reckoned as Holy Men, entered to perform their Offices; and began first, some to remove the Bowels in the upper Cavity, excepting the Heart and Reins; and others to cleanse the lower Belly, which they wash'd with Palm Wine, or other aromaticall Liquors; and during the Space of above thirty Days, they wash'd the Body with Balsam, Gum, or Refin of Cedar, and fill'd it with Powder of Myrrh, Aloes, *Indian Spikenard*, *Bitumen of Judea*, and other Things of the like Nature; but they never us'd *Frankincense*, which we now call *Olibanum*; either because of the great Veneration for that Drug, or by Reason of its Scarceness. As to the Head, they us'd Iron Instruments which they thrust up the Nostrils, and drew out that way all the Substance of the Brain; and afterwards they syring'd up precious and odoriferous Liquors.

The second Sort of *Embalming* was reckoned at half a Talent, which was us'd to the middle Sort of People, where they contented themselves only to syringe the Body, or make Injections into the Bowels of Water, or a Decoction made of Simples, or other Drugs, and Oil of Cedar; and afterwards, when the Body was thus prepar'd, to put it into Salt for Seventy Days; after which Time they took it out, and having open'd it, they drew out the Intestines, which were almost wholly consum'd. This done, they wrapt all the Body in Bandages of fine Linen dipp'd in *Myrrh* and *Asphaltum*; and the Overseer, whom they call'd the *Scribe*, cover'd the Wrappings with a painted Cloth, whereon was represented the Rites of their Religion, in *Hieroglyphick Characters*, and the Animals which the Dead had lov'd most.

The History of the Beetle.

The Principal of all those Animals, or that for which the *Egyptians* had most Veneration, was the *Beetle*; as well because of its wonderful Birth or Production, as from the Analogy or Resemblance they pretend this Animal has with the Sun, and, indeed, however base and low this Animal may appear to us, as always living in Dung, he yet has a strange

of Animals.



A Mummy. The Hind part.

A Paged.

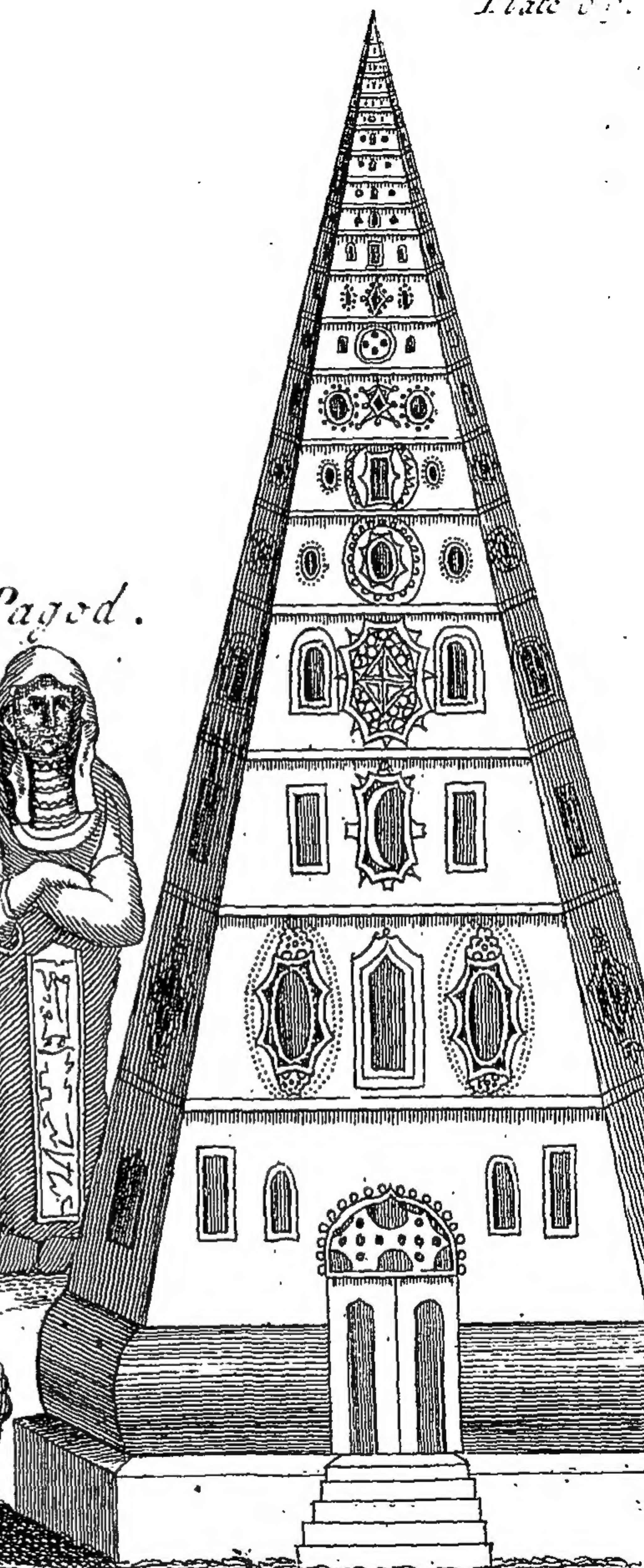
a Dissector



An Embalmer.



a Body Embalmed.



An Egyptian Pyramid

strange Instinct to continue his *Species*. For this little Animal breeds without the Aid or Assistance of any Female; for when the Male would produce, he seeks out the Dung of an Ox or Bull, and having found it, he forms a round Ball, of the Figure of the World, which with his hind Feet he turns from East to West, and turning himself towards the East, he imitates the Motions of the World. Having thus roll'd the Ball, he puts it in the Ground, and leaves it there twenty-eight Days, which is the Time in which the Moon passes through the Signs of the Zodiac; and during that Time the little Beetles hatch in the Ball; and the twenty-ninth Day, which is the Day of the Conjunction of the Moon with the Sun, and the Time Productions are made in Nature, this little Animal rolls its Ball into the Water, where it opens, and the Beetles get out. It is upon this Account some say, that it is made the Emblem of *Birth*, and the Symbol of Fathers; because these Insects have only a Father, and no Mother. They represent also the World, because of the Ball which they form and turn round; and Man, because there are none but Male Beetles. They are of several Kinds, but those for which the *Egyptians* have the greatest Veneration, are such as have a Head like a Cat, surrounded with a kind of Rays, which give Occasion to them to believe that these Animals have some Analogy to the Sun; and the more, because this Insect has thirty little Paws, made like Fingers, which represent the thirty Days that the Sun takes each Month in his Course. As to the other hieroglyphical Characters, the History of them is too tedious, but they may be seen in Father *Kircher*.

The third Sort of Embalming was for the poorer People, which was made with a Mixture of *Pitch*, and *Bitumen* of *Judaea*; or the Bodies were dried with *Lime*, or other Drugs of little Value; and sometime they us'd *Egyptian Natrum*, *Salt*, *Honey*, and *Wax*: Sometimes likewise they boil'd the Bodies in Oil to consume the Moisture, which is the only Cause of the Corruption; for the Principle of Corruption, according to a learned modern Author, is a moist Heat, that introduces itself into the Flesh by the Dissolution of the Parts, and by the Mixture of heterogeneous Bodies; which possess the Spaces which the Heat opens and enlarges. The Air, which is hot and moist, is the most common Dissolvent of all Bodies; and the only Way to preserve them, is to defend them from the Air; to which we may add, that the Air being full of an infinite Number of Insects, which we cannot perceive because of their Minuteness, they are these little Insects that adhere to the Flesh and prey upon it; and as they

easily increase, there are Seasons wherein all the Air is full of them, especially in Times of the Plague, and other malignant and contagious Diseases: And it hath been observed, by Microscopes, that what we call a *Gangrene* is nothing else but a vast Number of little Insects eating the Flesh, as Mites do Cheese. Therefore there is no other way of keeping Flesh, but by excluding these Animals, which is done by Means of Honey, Oil, Spirit of Wine, and some other Liquors, that fetter and entangle, or burst these Insects.

But the Curiosity of the ancient *Egyptians* went much further, because of the great Veneration they had for their deceas'd Relations, which they suffered not to be interr'd, or conveyed out of their Sight, but rather sought out Ways to have them continually before their Eyes, to the End that they might imitate their Actions; that is to say, live according to the Honesty and Integrity of their departed Friends, having such Regard to their Actions as to make them the Rule of their future Conduct.

For which Reason, when any of their Kindred died, they manag'd them so exquisitely, and dried them after such a Manner, that their Bodies became as hard as Marble Statues, and they called them in their Language, *Gabbaras*, which signifies *Mummies*; and their Art of preparing them was so nice, that nothing in them was disfigur'd. They would paint their Faces of the several Colours; after they had been embalm'd, their Arms were placed across, the one upon the other, and bound about with fine Linen, which had been before dipt in aromatical Gums; and then they put upon the Head a Napkin, like a Woman's Coif, that hung down on both Sides upon the Breast, and behind upon the Shoulders. They had besides, under the Chin, a twisted Neckcloth, that served to squeeze their Cheeks together, and tie their Jaws close, so that they could not fall; and thus they appear'd rather like Persons asleep than dead.

If by any Sickness they were disfigur'd, they clapt over their Faces Masks of Platteboard, or of painted Cloth, resembling the dead Person, and embellish'd or adorn'd with the several Colours. On the contrary, if the Person was not disfigur'd, they left the Face and Ears naked, and so painted them as they pleas'd. The Dead being thus order'd, they were put in great Cases of Glass made on purpose, according to the Grandeur of the Person; afterwards they plac'd them in the most elevated or highest Part of their Houses. And this they reckon'd such a valuable Pledge and Token of their Faith, that if any of them

them happen'd to want Money, he could not give a better Security than the embalmed Body of his Relation in its Case; and that which made it esteem'd so, was, that they would spare no Pains to pay the Money again; for if by Miſchance the Debtor could not redeem this Pledge, he was reckon'd unworthy of Civil Society, which engag'd him indispensably to find out Ways to recover his Kinsman in the Time limited, otherwise he was condemn'd by all the World.

The *Egyptians* were at other Times at a great many other Expences for preserving their Bodies: For after they were embalm'd (though not dried) with several precious Drugs, and wrap'd about with a great deal of fine Linen; as sometimes they us'd above two hundred Ells of Bandage, so that nothing was seen but the Face, and sometimes nothing at all; they were likewise put up in Boxes or Coffins of precious Wood, which the Dead had caus'd to be made while living, together with the Idol or Pagod, which they worshipp'd in their Life-time, and before they were buried the Nails of their Hands and Feet were stained red with *Alkanet*. The Idols or Pagods were made of Gold, and Silver, and other Metals, but most usually of the Clay of the Country, with hieroglyphical Characters, which denoted the Quality of the Dead, the Charge of the Embalming, the Time of their Death, and the Place from whence they came.

After they had shut up the Coffins of their deceas'd Friends, they carried them, with great Pomp, into the Places which they had caused to be built in their Life-time, as is to be seen at this Day by the Pyramids of *Egypt*, which are two or three Leagues from *Grand Cairo*. And Historians relate, that *Chemmis*, King of *Egypt*, made one, about which an hundred thousand Men were employed for twenty Years, which was of a square Figure, and the Face or Front on each Side of the Basis, was eight hundred Foot broad, and of the same Height, in which was a perpetual Lamp. We may see, by this, what Care was taken of the Dead; and we ought to undeceive those who are so credulous as to believe, that those are true *Mummies* which are brought us to sell again as a Commodity, they being only Bodies pitched over, as we shall relate presently.

Besides these pretended *Mummies*, and the former, we meet with another Sort; those of *Africa*, which are call'd white *Mummies*, and are nothing else but the Bodies of those that are drown'd in the Sea, which being cast upon the *African* Coast, are buried and dried in the Sands, which are very hot; and though they have been lully Men in their Lives, after they have lain some Time

there, they weigh not above thirty Pounds, and are then in a Condition of keeping for ever. There is one in *Paris*, in the Cabinet of Mr. *Boudet*, Nephew to Mr. *Boudet* the King's Physician. These *Mummies* are little us'd, because they are both dear, and have little or no Virtue in them.

We shall next give some Account of the *Jews* carrying on their Rogueries, as to these *Mummies*, and after them the *Christians*. I shall first observe, then, that the *Mummies* that are brought from *Alexandria*, *Egypt*, *Venice*, and *Lyons*, are nothing else but the Bodies of People that die several Ways, whether bury'd or unbury'd, that are afterwards embowell'd, and have their several Cavities fill'd with the Powder, or rather Sweepings of Myrrh, Caballine Aloes, Bitumen, Pitch, and other Gums, and then wound about with a *Cerecloth* dipt in the same Composition. The Bodies being thus prepar'd, are put into an Oven to consume all their Moisture; and being well dried, are brought and sold here for true *Egyptian Mummies* to those who know no better, and don't understand that the *Egyptians* put the greatest Value imaginable upon their Dead, and that what they did in this Kind was to preserve the Memory of their Friends, and not to make a Trade of them. To prove what I say, I shall relate what Mr. *Guy de la Fontaine*, the King's Physician, and after him *Ambrose Parey* have said.

The *Sieur Guy de la Fontaine*, being at *Alexandria* in *Egypt*, went to see a *Jew* in that City, who traded in *Mummies*, that he might have ocular Demonstration of what he had heard so much of. Accordingly, when he came to the *Jew's* House, he desired Leave to see his *Mummies*; which he having obtain'd with some Difficulty, the *Jew* at last opened his Magazine, or Store-house, and shew'd him several Bodies piled one upon another. Then after a Reflection of a Quarter of an Hour, he ask'd him what Druggs he made use of? and what Sort of Bodies were fit for his Service? The *Jew* answered him, that as to the Dead he took such Bodies as he could get, whether they died of a common Disease, or of some Contagion: And as to the Drugs, that they were nothing but a Heap of several old Drugs mix'd together, which he apply'd to the Bodies; which after he had dried in an Oven he sent into *Europe*; and that he was amazed to see the *Christians* were Lovers of such Filthiness.

This is very different from what the ancient Physicians imagined, when they prescribed *Mummy*. But as I am not able to stop the Abuses committed by those who sell this Commodity, I shall only advise such as buy, to chuse what is of
a fine

a fine shining Black, not full of Bones or Dirt, of a good Smell, and which being burnt, does not stink of Pitch. This is reckoned proper for Contusions and to hinder Blood from coagulating in the Body; it is also given in Epilepsies, Vertigoes, and Pal-sies, the Dose is two Drams in Powder, or made into a Bolus. It also stops Mortifications, heals Wounds, and is an Ingredient in many Compositions.

Some Authors will have it, that the Fat, mix'd with *Bitumen* that flows from the Tombs, is the *Asphaltum* and true *Mummy*; and others say that it is the preserv'd Flesh, which was brought into Use by a *Jewish* Physician, who wrote, 'That the said Flesh, thus preserv'd and embalm'd, serv'd for the Cure of several Diseases. They have likewise given the Name of *Mummy* to several natural Bitumens; as that of *Judaea*, and those which flow from several Mountains of *Arabia*, and other hot Countries: But those Appellations are very improper, they being fat, viscous, stinking Humours, that breed in the Entrails of the Earth.

Of other Preparations made from Human Bodies.

Besides the *Mummy* that is met with in the Shops, we sell human Fat or Grease, which is brought us from several Parts; but, as every Body knows in *Paris*, the publick Executioner sells it to those that want it; the Druggists and Apothecaries sell very little: Nevertheless they vend a Sort of it that is prepar'd with aromatical Herbs, and which is, without Comparison, much better than that which comes from the Hands of the Hangman. This *Adeps*, or *Axungia*, is reckon'd very good for Rheumatisms, and other Diseases proceeding from a cold Cause. Besides the Fat, we sell the fix'd and volatile Salts of the Blood, Scull, Hair, and Urinè, and other Chymical Preparations, to be found in Mr. *Charas's Royal Pharmacopœia*, &c. which those who desire to know further about these Preparations, may have recourse to. As to the Choice of all these, the only Rule is to buy them of honest People, for otherwise the best Judges may be deceived in them.

Man's Grease is emollient, discutive, anodyne, and antiparalytick. It is good against the Gout, and contracted Nerves, made into an Ointment, as follows: Man's Grease, two Pounds; Gum Elemi, half a Pound; Bees-Wax and Turpentine, of each one Pound; Balm of *Gilead* or *Pernu*, four Ounces; mix and make an Ointment, by melting all together. Man's Skull is a specifick Medicine in the Cure of the Falling-sickness, and

indeed of most Diseases of the Head, taking of the crude Powder, rasp'd from the fresh Bone of the Skull, one Scruple or two, in any proper spirituous Liquor. The Oil and volatile Salt are for the same Purposes, but in less Quantities.

Of the Moss upon the Human Skull.

The *English* Druggists, especially those of *London*, sell the Heads or Skulls of the Dead, upon which there is a little greenish Moss, which is call'd *Ufnea*, because of its near Resemblance to the Moss that grows upon Oaks; and as Mr. *Charas* staid a considerable Time in *England*, and saw great plenty of them, I have only related what he told me on this Subject. This Moss is an Excrecence that grows two or three Lines high, on the top of and round Men's Skulls who have died violent Deaths, and lain some Time on the Ground, or hung on Gibbets, or the like. It only begins to grow when the fleshy Substance about the Skull is wasted away. The *English* Druggists generally bring these Heads from *Ireland*; where they frequently let the Bodies of Criminals hang on the Gibbet till they fall to Pieces. You may see in the Druggists Shops of *London*, some of these Heads entirely cover'd with Moss, and some that only have the Moss growing on some Parts; and we ought not to be surpriz'd at the Growth of this Moss on the Skulls of dead Men unburied; since we daily see the Hair of the Head, Beard, and some other Parts of the human Body, grow after Death, as long as there is any Moisture left to supply Nourishment to the Part; and that the same thing happens to the Nails is evident; but whether it will hold as to the Teeth, as some pretend, I dare not venture to affirm. The same Druggists send to foreign Countries, especially *Germany*, these Skulls covered with Moss, to put into the Composition of the sympathetick Ointment, which *Crollius* describes in his *Royal Chymist*, and which is very available in the Cure of the Falling-sickness. Some Virtues are also attributed to the Skulls taken from Gibbets, but in all Probability the Heats and Colds of the Seasons have dissipated the greater Part. The Skulls of Criminals newly hang'd, stripp'd of the fleshy Membrane, and the Brains taken out, being well washed and dried, and separated with a Saw from the lower Part, are, or ought to be, what the Druggists sell by the Name of *Human Skull*.

A Mummy is the dead Body of a Man, Woman, or Child, which is embalm'd and dried. The first Mummies were taken from the Burying-places of the ancient

antient *Egyptians*, near the Pyramids, were the finest were to be seen a few Leagues from *Grand Cairo*. This embalming was made with Balsams, Resin of Cedar, *Jews Pitch*, Myrrh, Aloes, and several other aromatical Ingredients, capable to dry up the Humidity or Moisture of the Flesh, to stop the Pores, and prevent the Air from entering, and to resist Putrefaction. We use at this Day almost the same Drugs for embalming dead Bodies; but whether it was that their Drugs were better than ours, or that they had a more perfect Method of embalming than we have, or that their Burying-places were drier, more impregnated with Salts and Bitumen, or less subject to Putrefaction, their embalm'd Bodies lasted vastly longer without Corruption, than those we do at present, if we dare believe Tradition; for they pretend to shew us *Egyptian Mummies*, of near four thousand Years Duration; whereas we take a great deal of Pains in these latter Ages, to preserve them two or three hundred Years.

And here it may not be improper to give an Account of the modern Way of embalming, from Mr. *Dionis's* Course of Chirurgical Operations. Embalming is an Operation almost as antient as the World, and which has been practised in all Ages; and either out of a venerable Regard to their Relations, or a Principle of Religion, Men have always endeavoured to preserve their Dead; of the Truth of which *Arabia* and *Egypt* have furnish'd an infinite Number of Instances; but at present we embalm none but the Rich and Great, whose Relations only are willing to be at that Expence.

Mr. *Penicher*, a *Parisian* Apothecary, has given us a Treatise of Embalming, according to the Practice of both the Antients and Moderns, which consists of several learned Enquiries on this Subject: He relates the Stories of the Embalming of *David*, *Alexander*, and several others; wherefore I refer you to him for the Satisfaction of your Curiosity; but, talking indeed like an Apothecary, he gives us so many Sorts of balsamick Powders, that he would very much puzzle us which to chuse, if we did not know that they are almost all alike. He further pretends, that it is the Apothecary's Right to preside in Embalming; that the Composition and Application of the balsamick Matters belongs to him; and that the Surgeon is present for no other End than to make the Incisions, and fix on the Bandages which he prescribes; but daily Practice overthrows what this Author pretends to advance. 'Tis the Surgeon only who embalms; 'tis he who is charg'd with the whole Operation; and after the Apothecary has prepar'd what he requires, he is not to concern himself any further

in it, unless he will attend as one of the Surgeon's Apprentices or Assistants, to hand to him what he has Occasion for.

Mr. *Penicher* cites, as a Precedent for Embalming, that performed on the Dauphiness. We are not to be surpriz'd if his Relation is not exactly just in several Circumstances; he transcrib'd it from a Memorial which the Apothecary to that Princess gave him; and its Author believing Pharmacy so much above Surgery, that the latter could not dispute it, has by this Memorial taken all advantageous Hints which seemed to him to favour his Opinion. But having performed that Embalming myself, none can be a better Evidence in this Case, the particular Relation of which, to avoid Repetition, I forbear here, because the Method which I shall lay down, of performing a complete *Balsamation*, will inform you of all that passed at that of the Dauphiness.

After the Opening of the Body, and the drawing up, and signing of the Relation of the Particulars to be observ'd with regard to the Body, the Physicians and Surgeons withdraw, leaving to the operating Surgeon the Care and Direction of the Embalming; wherefore, all depending on him, he causes to be brought into the Chamber where the Corps is, all the necessary Ingredients and Instruments for that Operation; and which we know to be of three Sorts: First, those which the Plummer is to make; secondly, what belongs to the Surgeon; and, thirdly, those which relate to the Apothecary.

The Plummer being sent for, comes to take the Surgeon's Order about the Size of the Coffin; because if he should content himself with taking Measure of the Body, that Case would prove too little to hold it after embalming: He bespeaks of him a leaden Barrel to put the Entrails into; and also a leaden Box made of two Pieces, to shut, to contain the Heart after it is embalmed; ordering him to bring all of them to the Chamber where the Corps is, at the Hour which he appoints. The principal Part of the Surgeon's *Apparatus* consists in Bands; for the Instruments are the same which are us'd in opening of the Body. The Surgeon then is to prepare five Bands; two of three Fingers Breadth and four Ells long, to bind the Arms; two of four Fingers breadth and six Ells long each, to bind the Legs and Thighs; and one yet broader and longer, to perform the necessary Circumvolutions about the Body. 'Tis the Apothecary's Business to furnish, first, the aromatical Plants well pulveriz'd in a Mortar; secondly, the Gums and odoriferous Drugs beaten to a fine Powder; and, thirdly, a Liniment to rub over and anoint the Body.

The

The first or coarsest Powder, which serves to fill the great Cavities, and to be put in with the Entrails, is compos'd of four or five and twenty different Plants; to which end we make use of the Leaves of some of them, the Roots or Flowers of others, and the Rinds, Barks, or Seeds of others. The most proper, and the most easy to be gotten, are the Leaves of Laurel, Rosemary, Sage, Baum, Wormwood, Marjoram, Hyssop, wild Thyme, Basil; Roots of Orrice, Angelica, Calamus Aromaticus; the Flowers of Roses, Camomil, Melilot, Lavender, Lemon and Orange Peel; the Seeds of Anise, Fennil, Coriander, and Cummin: To all which, when well powder'd, are to be added so many Pounds of common Salt, as to encrease the whole to thirty Pounds Weight. Of the other, which is the finest Powder, there must be ten Pounds, and it is to be composed of ten or twelve odoriferous Drugs, which are proper to preserve the Body for the Space of several Ages; they are Myrrh, Aloes, Frankincense, Benjamin, Storax Calamita, Cloves, Nutmegs, Cinnamon, white Pepper, Sulphur, Alum, Salt Petre; all which are to be well powdered, and passed through a Sieve. The Liniment is to be composed of Turpentine, Oil of Laurel, liquid Storax, and Balsam of Capivy, by reason that of Peru is so scarce, that it alone would cost more than all the embalming Ingredients. Three Pounds of this Liniment are sufficient to make the necessary Embrocations. Besides these three Articles, the Apothecary is to provide three or four Pints of Spirit of Wine, five or six great Bundles of Tow and Cotton, two Ells of the broad Cerecloth, and a large Bundle of coarse Cord. The Surgeon provided with all these Preparations, is ready to begin the Embalming, which he executes in the following Manner.

Having ordered to be set near him the leaden Barrel, the Surgeon takes some Handfuls of the coarser Powder, and spreads it over the Bottom of the Barrel, and above that spreads Part of the Powder, and then another Lay of the Entrails, thus continuing on, *Stratum super Stratum*, till he has laid into the Barrel all the Parts which were contained in the Head, Breast, and Belly, except the Heart, which he separates, and puts to soak in Spirit of Wine, till he has finished the whole Body. When he embalms that in particular, he must remember to end with a Lay of Powder, and if the Barrel is not full, he is to fill it up with a Bundle of Tow; but if the Plummer has made it too high, the Operator is to order him to cut off all of it that is too long, that the Cover being folded on, no Part of it may remain empty.

The three Venters or Cavities being thus evacuated, we are to wash them with Spirit of Wine,

before we fill them up; which done, we begin with the Head, filling up the Skull with the Powder and Tow mix'd together; and having got in as much as it can contain, we put it again into its Place; and before we sew the hairy Scalp over it, we put betwixt them some of the finer or balsamic Powder. We pour some Spirit of Wine into the Mouth to wash it, and then fill it with the same Powder and Cotton; we do the same to the Nostrils and Ears, and then with a Pencil or Brush we embrocate the Face, Head, and Neck, with a Liniment; and after strewing the fine Powder on all those Parts, we form a Crust over the whole Superficies. With the Powder and Tow the Operator fills up the Breast and Belly, which is now but one large Cavity; for in taking out the Entrails he has before taken out the *Diaphragm*, which separated them one from another. He is not here to be sparing of his Powders, which must prevail in this Part, the Tow being only made use of to bind and keep them together. He returns the *Sternum*, and after having cover'd it with the fine Powder, which he also thrusts betwixt the Ribs and Tegument, he performs the Suture with a Needle, from the Neck to the *Os Pubis*, and a transversal one, from one of the lumbar Parts to the other. With a Pen-knife we make around the Arm four large Incisions of half a Foot long each, and as deep as to the Bone, and as many on the Wrist; these we wash with Spirit of Wine, and fill with the odoriferous Powder. We cover the Arm with the Liniment with the same Pencil, and gently strow over it the same Powders, which easily stick on by reason of the Liniment. We then take a Band, with which we begin at the Hand, rolling it very tight up to the Shoulder, where it is to end, and be fastened. Whilst the Operator is thus employ'd about one Arm, an Apprentice is to do the same to the other, conformable to his Example.

The same Operation is to be performed to the Thighs and Legs, with this Difference only, that the Incisions are to be longer, deeper, and more numerous than in the Arms. These Parts, thus cut, look like *Switzers Breeces*. After they have sufficiently imbib'd the Spirit of Wine, they are to be fill'd with aromatical Powders; the Liniment applied to them, and the Powders over them, the Operator rolls on the Band on one Thigh, whilst a Servant applies another on the contrary: These two Bands begin at the Feet, and terminate at the Groin. We then turn the Body to make the like Incisions on the Back, at the Region of the Reins, and on the Buttocks; and if the Corps be fat, we are also to do the same around the Belly and Breast. The Lotions, Embrocations,

tions, and Application of Powders, are ended with the Belly-band, which is strong, very broad, and long, and beginning at the lower Belly, so perfectly rolls over the Body, that no Part of it is left uncovered.

The Body thus enamell'd, we lay it on a Cerecloth, in which we wholly enclose it, cutting it close so as to come close over all the Parts without folding it; and with a Cord, which is to be ten or twelve Ells long, we begin to straiten it about the Neck, to form the Figure of the Head, that it may be accommodated to that of the Coffin. We run it several Times around the Body, each Circumvolution at the Distance of half a Foot from the other, and draw it as tight as we would a Pack to be sent by the Carrier. The Body is then put into a Linen Shroud, which with a String we tie at each of its two Extremities, leaving about a Handful beyond each of the Ligatures. We then call for the Coffin, ordering it to be brought near to the Table where the Body is; and if 'tis a Princess of the Royal Family, the Lady of Honour is to take hold of the Handful of the Shroud which is left at the Head, and the Lady of the Wardrobe of that at the Feet, and they lay the Corps into the Coffin, which last Service they claim as the'r Right.

If the Surgeon has any balsamick Powder left, he strows it in the Coffin, and fills the vacant Spaces with Bundles of aromatical Herbs, which he is to have ready provided for that Purpose; which done, the Plummer fixes on the Lid of the Coffin, which he folders on as expeditiously and neatly as he can. Whilst he is foldering the Coffin, the Surgeon embalms the Heart; he takes it out of the China Vessel in which he put it, washes it several Times in Spirit of Wine, and fills its Ventricles with the finest balsamick Powder, reserv'd expressly for that End; then encloses it in a Bit of Cerecloth, wholly sprinkled with the same Powder; he binds and fastens it with the same Cord, shaping this small Bundle in the Figure of a Heart, and so putting it in the Box. The Coffin being foldered, we lay it on two Feet in the Middle of the Room, and cover it with a Pall, and lay on the Coffin the Box which contains the Heart, which we cover with Crape, and leave both of them to be carried to their destin'd Sepulchre.

Some of the Antients pretended to have invented a Way preferable to all others, which was to take out generally all the Flesh, and leaving only the Skin and Bones, to substitute in their Place aromatick Drugs and Powders; tho' this is not to preserve the Body, but only the Skin and Skeleton from Putrefaction. Some Moderns

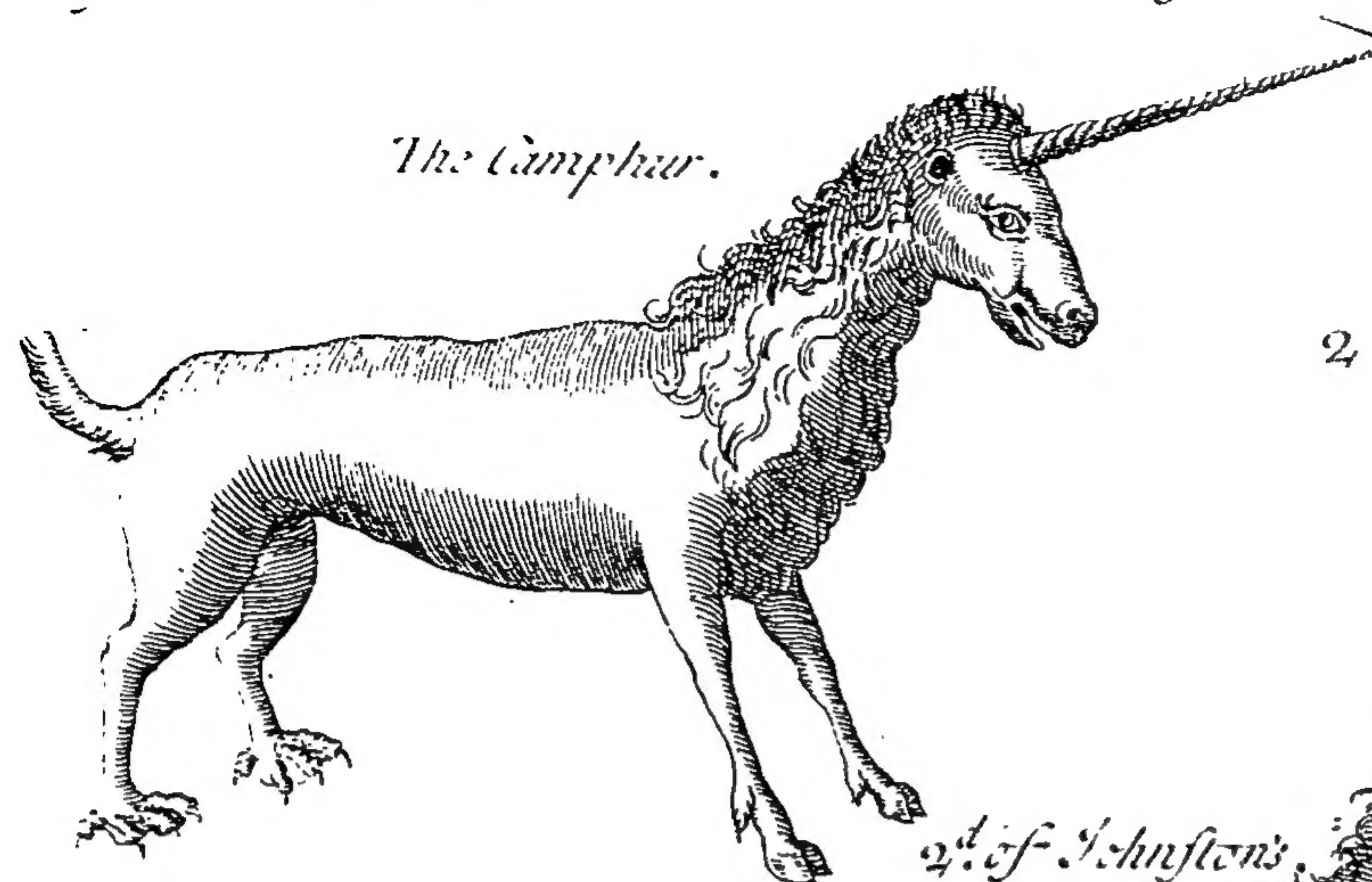
propose to us easier Ways, of which there are several Sorts, with which Mr. *Penicher* has fill'd his Book; wherefore I shall forbear the Recital of them here, and content myself in acquainting you, that the History of Embalming, which I have just laid before you, is that which I have performed on the Dauphiness, and several Persons of the first Quality, being that which I take to be the best of them all. I have heard of antient Sepulchres of Plaister, in the Middle of which the Body was placed, and also cover'd with Plaister; that in these sort of Graves, the Bodies kept for a long Time, without emitting any ill Scent, because the Salt Petre which is in the Plaister resists Putrefaction; and the Plaister imbibing the stinking Serosities which issue from the Body, stops the offensive Exhalations. This Fact may put some upon reducing it to Practice; which in my Opinion should be done the following Way: The Person resolv'd to try this Experiment, is to order the making either of a leaden or wooden Coffin, proportioned to the Bulk of the Body, which is to be laid into it stark naked; when having ready three or four Hods of Plaister strain'd thro' a Sack, so that it may reach to the Edges, the Corps must be wholly buried in Plaister. By this Method we may keep a Body several Days in the House, and then lay it in a Vault design'd for the Dead, without the Danger of any ill Scent; and 'tis impossible to embalm a Body with more Ease, and less Expence.

[The true *Ægyptian Mummies* are very seldom found in the Shops, but are what ought to be us'd in Medicine; the Gums and Spices they abound with, making them very different from the Counterfeits. The next in Goodness to these, is what is called the *Arabian Mummy*, which is a thick Liquor, of a dark Colour and aromatick Smell, flowing out of the Bodies, embalm'd with Myrrh, Aloes, &c.

We also sometimes see the Liquor of *Ægyptian Mummies*, which have been preserv'd with the *Bitumen Judaicum*, with the Mixture of other Ingredients, which is not much inferior to the former; but the Thing commonly sold under the Name of this, is the *Pissaspphaltum sacellum*, which is a Mixture of common Pitch, and *Bitumen Judaicum*.

The white *Mummies* are not the Bodies of such as have been drown'd, but human Carcasses bury'd and dried in the Deserts of *Africa*, as those of *Zara* and *Libya*; where the Winds sometimes bury whole Caravans at once in the Sands, where the Bodies dry and become light, and of the Consistence of Horn. These are never us'd in Physick, nor any of the others often now: and whatever Virtues they have been suppos'd to be possess'd of, may rationally be judged to be more
owing

The Camphur.



2

1st of Johnston's Unicorns.



2^d of Johnston's.



One of y Pirascupi.

3^d of Johnston's.



owing to the Ingredients of the Composition they were preserved with, than to the Flesh of the Carcase, and therefore may be had from those Ingredients, in a more decent Manner, than by swallowing the Flesh of our Fellow Creatures.

The other Parts of the human Body, mentioned in the Catalogues of officinal Substances, are the Skull, the Skin, the Fat, the Bones, the Marrow, and the Heart. Virtues have also been attributed to the Hair, Nails, Saliva, Ear-Wax, Sweat, Milk, menstrual Discharges, Secundines, Urine, Dung, Semen, Blood, Stone of the Bladder, and the Membrane enclosing the Head of the *Fetus*, by several Authors; but few of them are used now. *Sal Armoniac* indeed is a Preparation of Urine and other Ingredients; and the Skull is an Ingredient in the *Pulvis ad Guttetam*; but little other Use is now made of any thing belonging to the human Body.

As to the strange History here given of the Beetle, it may be proper to observe here, that that Animal is produced by the Eggs of a female Parent, which hatch into six-footed pale-coloured Worms, which afterwards change into Beetles, as the Caterpillar does into a Butterfly.]

2. Of the Unicorn.

Pomet. **T**HE Unicorn is an Animal which Naturalists describe under the Figure of a Horse, having in the Middle of his Head a spiral Horn, of two or three Feet long; but as we know not the real Truth of this Matter to this Day, I shall only say, that what we sell under the Name of the *Unicorn's* Horn, is the Horn of a certain Fish, by the Islanders called *Narvual*, or the *Sea-Unicorn*, as you will find when we come to treat of Fish. This Horn was formerly in great Esteem, because of the mighty Virtues attributed to it by the Antients, especially against Poisons, which is the Reason that many great Personages have been very fond of it; so that it has been valued at its Weight in Gold. And there are yet some People, who esteem it as highly.

Ambrosè Paracelsus, in a little Treatise which he wrote of the Unicorn, says, That in the Deserts of *Arabia* are wild Asses, which they call *Camphurs*, carrying a Horn in their Front, with which they used to fight against the Bulls, and which the *Indians* made use of to cure several Diseases, especially such as came by Poison; and that the *Arabs* near the *Red Sea* had another Animal among them, which those People called *Piraf-soupi*, that has two Horns, long, straight, and spiral, which the *Arabs* make use of when they are wounded, or bit by any venomous Creature.

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They let this infuse six or eight Hours in Water, which they drink to cure them. He says, that this Animal is of the Size of a Mule, which also it resembles in its Head; and that the Body is hairy like a Bear, a little inclining to a fallow Colour, and the Hoof divided or cleft like the Deer's. *Johnston* says, in his Treatise of Animals, that there are other *Unicorns*; to whom the Reader may have recourse.

However, that the Unicorn is a Beast having but one Horn, all agree; but because there are five several Kinds of Beasts which have also but one single Horn, it is some Question which of them be the true. They are, *First*, The Orix, or one-horn'd wild Goat. *Secondly*, The one horn'd Ox. *Thirdly*, The Hart with one Horn. *Fourthly*, The one-horn'd Hog. And, *Fifthly*, the one-horn'd Ass. The first is certainly but a kind of one-horn'd wild Goat, the Description of it differing not much from a Goat. It resembles a Roe, having a Beard under its Chin, of a palish white Colour, and is cloven hoofed, with one Horn growing out of the Middle of its Head. These are bred in *Egypt*, *Æthiopia*, and many other Parts of the World some of them are as large as Oxen. Their Horns are not only strong and sharp, like the Horns of a *Rhinoceros*, but also solid, and not hollow or porous, like the Horns of Harts. This Creature is said not to value the Barking of the Dog, the Foaming of the Bear, the Bellowing of the Bull, the Cry of the Panther, or the Roaring of the Lion.

The one-horn'd Ox, Bull, or Cow, is bred in *Aonia*, of various Colours, intermix'd one with another, having a whole round Hoof, like a Horse, and but one Horn growing out of the Middle of the Forehead: It is also bred in *India*, where the whole Species eat Flesh, and are whole-hoof'd, and have only a single Horn, which grows out of the Middle of their Foreheads. Some of them are said to be as high as Camels, and their Horn four Feet long. There are also in *Æthiopia*, a kind, of a purple Colour, which have but one Horn growing out of their Heads, which turns up towards their Backs.

The Unicorn Hart is a Beast bred also in *India*, whose Feet resemble an Elephant's; the Body, a young Horse, and its Head, a Hart's; out of the Middle of which grows a Horn about three Feet long. It has a roaring Voice almost like a Bull, but much shriller.

The Unicorn Hog is so called from his Head, being like a Boar's or Hog's Head, found, as some Authors say, in the Dominions of the Great *Cham* of *Tartary*. This Species of Unicorn is somewhat less than the Elephant; they have Hair like Oxen,

Heads

C

Heads like Hogs, Feet like Elephants, a sharp and thorny Tongue, and a Horn in the midst of the Forehead, wherewith they destroy both Man and Beast. Had this Horn grown out of its Snout, it would have been a *Rhinoceros*; but as it does not, it must be taken for one of the Kinds of *Unicorns*.

The one-horn'd *Afs* is the *Indian Afs*, which equals in Bigness a Horse; all white on the Body, but purple-headed and black-eyed, having one Horn in his Forehead, near three Feet long, whose upper Part is red or black, the Middle black, and the nether Part white. In these the great People of *India* drink, adorning them with all kind of precious things, believing that those who drink in these Horns are freed from any sort of deadly Poison or Infection. This *Afs*, or *Unicorn*, exceeds all others of the Kind, both in Stature, Body, and Swiftnefs of Foot. They are so strong that no Horse can stand before them, and fight with their single Horn like Bulls.

The true *Unicorn*, if you dare believe *Ludovicus Vertomanus*, who says he saw two of them at *Meccha* in *Arabia*, which were kept within the Verge of *Mahomet's* Sepulchre, is of a Weasel Colour, with the Head like that of a Hart, the Neck not long, and the Mane growing all on one Side; the Legs slender and lean, like the Legs of a Hind; their Hoofs cloven like Goat's Feet, and the hinder Legs all hairy and shaggy on the Outside. Of all the other five the wild *Indian Afs* comes nearest to this Description; for the true *Unicorn* and he agree in these four things: *First*, That both of them have one Horn in the Middle of the Forehead. *Secondly*, That both of them are bred in *India*. *Thirdly*, In that they are both about the Bigness of a Horse. *Fourthly*, In their Celerity and solitary Life in the Mountains. But herein they differ; *First*, In that the *one horned wild Indian Afs* is whole-hoofed, and not cloven, as the *Unicorn* is. *Secondly*, That his Colour is white on the Body, and purple on the Head; whereas the *Unicorn* is of a Weasel-like Colour. *Thirdly*, That his Horns are purple, black, and white; whereas the *Unicorn's* Horn is wreathed in Spires and of an Ivory Colour. In the Year 1553, a great *Unicorn's Horn* was brought to the King of *France*, valued at twenty thousand Pounds *Sterling*. That which was presented to King *Charles* the First, of *England*, is suppos'd to be one of the greatest that was ever seen in the World; it was seven Feet long, weighed thirteen Pounds, and was in the Shape of a Wax Candle, but wreathed within itself in Spires; hollow about a Foot from its Root, growing taper by little and little towards the Point; of a polished Smoothness, and the Spires not deep,

but like the Windings of Woodbine, and the Colour not perfectly white, but somewhat obscure.

Some in *Poland* have been found five or six Feet long, being very sharp and smooth: Others in the Rivers, but less pure, outwardly blackish, and inwardly of a pure white; a third and fourth Sort of a solid hard Substance, so that one would take them to be Stone; and many other Sorts have been found in that Country. But that these, or any of the others, were true *Unicorn* Horns, none of our Authors have yet made appear; and if all the Circumstances be considered, it is much to be doubted whether any of them were the right or not; forasmuch as the Druggists or Apothecaries were never known to have or sell the true, that which is commonly sold being from five to eight Foot in Length, and more, very sharp-pointed, running taper all along, and twisted or wreathed, of the Colour of Ivory, but of a much finer Grain, and very white within. Yet this Horn is not produced by a four footed Beast, but comes from a Fish called the *Sea Unicorn*, and is brought from *Davis's* Streights near the *North Passage*.

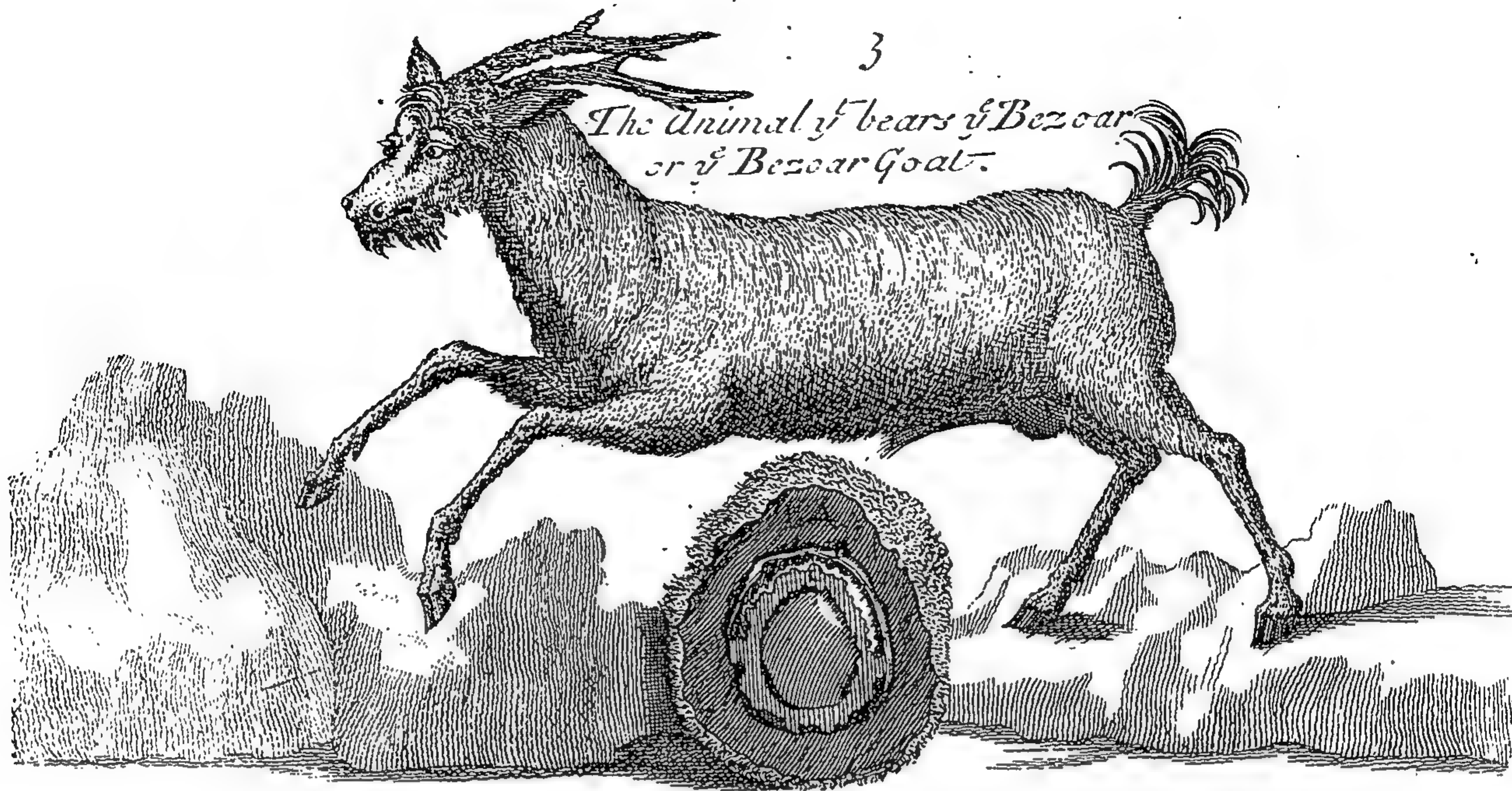
Authors have ascribed almost incredible Things to it, the chiefest of which are, to resist all Manner of Poisons, and to cure the Plague, with all Sorts of malignant Fevers, the Biting of Serpents, mad Dogs, &c. It is chiefly used as a Cordial, for which Purpose a Jelly is made of it, together with a little Cochineal and Saffron; and the Shavings are boil'd in Broth, &c. after the Manner of Shavings of Hart's Horn.

[The only one-horn'd Land Animal in the World is the *Rhinoceros*, which therefore is the true *Unicorn*, however variously describ'd by People who either knew nothing of it but by Hearsay; or had a Mind to tell strange Stories, rather than Truth. The Horn of this Animal is what the *Indians* use, and have so much in Esteem, taking it inwardly in almost all Diseases, and making Cups of it for their Kings to drink out of, imagining that nothing drank out of them can be poisonous. It is certainly a Sudorifick, probably from the Quantity of volatile Salt it contains, and is commended in Epilepsies, &c. The *Rhinoceros* is found in *Africa*, and in the Isle of *Java*, and is describ'd by *Bontius*, under the Name of *Abada sive Rhinoceros*: 'The Horn is black and solid, and when full grown is about twenty Inches long, and something of the Figure of a Bull's Horn.

The thing called *Unicorn's Horn* in the Shops, is the Tooth of the *Cetus marinus*, *Narwal dictus*. *Mont. Ex. 6. Balena decimum sextum genus dicta Narwal Schones. Jet. 28.* It has long been known to belong to this Fish, and has been erroneously thought

3

*The Animal y^e bears y^e Bezoar
or y^e Bezoar Goat.*



4

The Musk Goat.



thought to be a Horn growing out of its Nose, but is in Reality a Tooth of prodigious Length, growing out of his left upper Jaw: It is like Ivory but more solid and heavy, and its Fibres are smaller. Its Virtues are the same with those of Ivory, Hartshorn Shavings, &c.

The Pieces of this sold in the Shops, are often fictitious, being Pieces of the Bones of the Sea-Horse and other Animals, turned into the Shape of this. The fossile Unicorn's Stone is the *Cornu fessile. Worm. 54. Charlt. 23. Cornu fessile vulgo Monocerotis cornu Boet. 425. Ebur fessile. Clus. Exot. 163.* It is a stony or earthy Substance something resembling Bones, hard on the Outside, softer within, and sticking to the Tongue. It is dug out of the Earth, and has the same Virtues with the *Terna Lemnia*, and other such Earths.]

3. Of the Bezoar.

Pomet. **T**HE Bezoar, which the Indians calls *Pozan*, is an Animal that produces in its Stomach, a Stone that is called by that Name, to which great Virtues are attributed, which made it heretofore highly valued, and sold at a great Rate, as the right and oriental Bezoar is at this Day. There is a great deal of Trouble in meeting with the natural Stone, as certain Persons have found out the Secret of counterfeiting it; beside that these Animals do not produce any considerable Quantities; and several of them none at all. Mr. *Tavernier* says concerning Bezoar, as follows:

“ Bezoar comes from a Province of the Kingdom of *Golconda* lying on the North East. It is found in the Matter that is in the Maw of the Goats that browse on a Shrub, the Name of which I have forgot. This Plant bears little Buds, about which, and the Ends of the Branches which the Goats eat, the Bezoar forms itself in the Stomach of these Animals. It takes its Shape from that of the Buds and the Ends of the Branches; which is the Reason we see it of so many different Figures. The Peasants, by feeling of the Belly of the Goat, know whether there is any Bezoar there, and so sell it according to the Quantity that is therein. They rub their two Hands under the Belly, and press the Maw or Stomach along on both Sides, so that what is therein must fall into the Middle, and they can then perceive exactly by feeling, how much Bezoar there is.

“ The Rarity of Bezoar is in the Size; for the small Pieces have not so much Virtue in them as the large; but in this there is oftentimes a Cheat, because there are People who powder and mix the small Pieces of Bezoar with a certain

“ PASTE compos'd of a Gum, and something else of the Colour of Bezoar, and form it up with its several Coats in the same Manner as we see the natural Bezoar; but we may discover this Fraud chiefly these two Ways: The first is, to weigh the Bezoar, and steep it some Time in warm Water; and if the Water does not change its Colour, or the Bezoar lose its Weight, it is true and natural. The other Way is to run a sharp Piece of red hot Iron against the Bezoar; if the Iron enter, and it fry, it is a Sign of its Mixture, and that it is not natural. The larger the Bezoar is, the dearer it is, and it rises in proportion as a Diamond: For if five or six Bezoar Stones weigh one Ounce, that Ounce will be worth from fifteen to eighteen or twenty Livres; but if it be one Stone of an Ounce weight, it will sell for a hundred Livres. I have sold one of four Ounces and a Quarter for two thousand Livres.

“ There are also a great many Bezoar Stones taken from Cows, both in the East and Western Countries, and they are so large as to weigh seventeen or eighteen Ounces; of which Sort I have seen one that was presented to the Great Duke of *Tuscany*; but they have nothing near the good Qualities of the true Bezoar; six Grains of which will do more than thirty of this. As to the Bezoar that is found in Apes, it is so strong, that two Grains will perform more than six of that of the Goat; but it is very scarce: it is found particularly in the Apes to be met with in the Isle of *Madagascar*. This Sort of Bezoar is round, whereas the other is of various Forms, according as it is shaped from the Buds and Ends of the Branches which the Goats eat. As these Stones which are had from the Ape are a great deal scarcer than the other, so are they abundantly dearer, and more sought after; and when one is found of the Size of a Nut, it is sold sometimes for an Hundred Crowns. The Portuguese, above all other Nations, make great use of Bezoar, because they are always upon their Guard, or watching one another for fear of Poison.”

To this I shall add what Mr. *Du Renou* has observed of the Bezoar; who says, pag. 451. “ It is a very active Animal, that skips from Rock to Rock, at his Ease, and is very fierce; so that when he is closely pursued, he sometimes kills the Indian Hunters. The Hoof or Claws of his Feet are divided neither more nor less than the Goats; the Legs are pretty thick; the Tail short, and turn'd up; the Body hairy as that of the He-Goat, but shorter, and of an ash Colour, inclining to red, or rather of the

“ Colour of a Hind’s Belly ; the Head is shaped
 “ like the Goat, and armed with two black Horns
 “ hollow in the lower Part, and turn’d back-
 “ wards, and as it were lying down upon the
 “ Back, with which they make an obtuse Angle
 “ in joining.” And this Account I can affirm to
 be Truth, having seen two at the Marshal *Vitry’s*
 Castle. Besides what yet further confirms what
 the *Sieur Renou* has said of it is, that I have by me
 the four Feet, a Horn, and the Coat of the Stone
 of this Animal, which agree exactly with the Re-
 lation made by the *Sieur Du Renou*. As to the
 Coat of the Stone it is one of the greatest Curiosi-
 ties that has been seen a long Time in *France*,
 by the Account of the most intelligent People.

It is marked in the Plate A : it is of the Size
 of a Goose Egg, supplied on the Outside with a
 rough short Hair, of a dun Colour, and being
 cut asunder appears to enclose a Shell, mark’d in B,
 that is thin and brown, which makes a Covering
 for another Shell, that is white, and is marked C,
 where this Stone is contained, to which they
 give the Name of *Bezoar*. This is contrary to what
 all Authors have wrote of it ; and I should not
 have had the Confidence to have advanced it, if
 I had not had the Original in my Hands ; which
 makes it plain, that there can never be more
 than one *Bezoar* Stone at a time in the Belly of
 this Animal, because of the Bigness. And it is
 likely the great Number of these Animals that
 have no *Bezoar* at all in them, occasions their Scar-
 city and Dearth.

If you would have the finest and best Oriental
Bezoar, you must chuse that which is shining, of
 a pleasant Scent, tending to that of *Ambergrease*,
 smooth to Touch, and which rubb’d on Paper done
 with *Cerusse*, makes it become yellow. The less
 it is broken to Pieces, and full of Bits irregularly
 shap’d, the better ; and take care that the false be
 not mix’d with the true, especially when ’tis bought
 in large Quantities ; the more shining, large, in-
 tire, and round it be, the more it is valued. But
 as to the particular Figure or Colour, they are of
 no Consequence for its physical Use ; it is all one
 whether it be long, round, crooked, or twisted,
 smooth, rough, white, yellow, or grey ; but the
 Colour that is usually to be met with, is the Olive
 Colour.

Bezoar is a Preservative from pestilential Air,
 and a Remedy for the Small-Pox, Measles, or
 other contagious Diseases. It is reckoned also pro-
 per against Vertigo’s, Epilepsies, Palpitation of the
 Heart, Jaundice, Cholick, Dysentery, Gravel, to
 procure Labour-Pains, and against Poisons. Dose
 from four Grains to twelve. The *Jews* call this

Stone *Bell-Zaard*, which signifies the Master, or
 Overcomer of Poison.

Of Occidental Bezoar.

The occidental *Bezoar* differs from the oriental,
 in that it is usually much larger, being found some-
 times of the Size of a small Hen’s Egg. It is like-
 wise of diverse Colours, but most commonly of a
 light Grey. It is made up of several *Laminae*, or
 Crusts, laid one over another like the former, but
 much thicker, and being broke, appears as if it
 had been sublimed, in that one sees in it a great
 many little Needles shooting like those in Salt of
 Lead : the Outside is soft, and very smooth, of a
 reddish grey Colour.

These *Bezoars* are brought from *Peru*, where
 some of the *Bezoar* Animals are found. But as
 they are but rarely met with in the Belly of these
 Animals there, that makes it that very few are
 brought into *France*. It has also a very sweet Smell,
 much stronger than the *Oriental Bezoar*. And be-
 cause this *Bezoar* is very scarce, the *Dutch* and
 other Nations counterfeit it with a grey Paste,
 which they form into round Balls of what Size they
 please. And I have seen one of the Bigness of a
 Tennis-Ball, that was in the middle of a Cup, so
 fix’d that it could not be mov’d, to the end that
 it might be infus’d in the Liquor put in the Cup,
 in order to give a Flavour to it before they drank it.

There are also some others Things in the Shops,
 called sometimes *Bezoars* ; as the Heart and Liver
 of the Viper, &c. are called *Bezoar Animal*. The
 Juniper-Berries, *Bezoar Vegetable*, and the Ve-
 nice Treacle, Mithridates, &c. *Bezoar Compound* :
 The several Stones also found in the Stomachs of
 Hogs, Oxen, &c. are called by some *Bezoar*, but
 it would be better to confine the Word to the Ori-
 ental and Occidental Stones here described, and
 to call the others by the Names that more properly
 belong to them.

Bezoar is a Stone taken out of the
 Belly of certain Animals in the *East-Indies*. *Lemery*.
dies, of which there are several Sorts.
 I shall here mention four that are of Use in Phy-
 sick. The first Kind, or that most commonly us’d,
 is called, *Lapis Bezoar Orientalis*, or the *Oriental*
Bezoar. It is found in Balls of different Sizes and
 Shapes ; for some are as big as a Wallnut, others
 as a Nutmeg, other as a Hazel-Nut, and some as
 a large Pea : Some are round, others oval, flat, or
 bunch’d. The Superficies of all of them are smooth,
 polish’d, shining, of an olive or grey Colour. Their
 Substance, when broke, divides like *Laminae*, or
 Scales, that are form’d successively by different Ac-
 cessions

cessions of saline Humours, which petrify in the Belly of the Animals, after the same manner as Stones are form'd in the Channels of a Current of the Waters, which continually leave behind them certain Salts, which coagulate and form themselves into a hard Crust or Stone. This *Bezoar* is produc'd in the Belly of a wild Goat in the *East-Indies*, which they call in *Latin* *Capricornia*, because they partake of the Deer and the Goat. The Inhabitants otherwise call them *Bezoar*, from whence the Name of *Bezoar* arises.

This Animal is very nimble, so that he will skip from Rock to Rock; and is dangerous to the Hunter; for he will defend himself, and sometimes kills the *Indians* that pursue him. The Head resembles that of the He-goat. The Horns are very black, and are bending almost to his Back. The Body is cover'd with an Ash-colour'd Hair, inclining to red, much shorter than that of the Goat, and nearest to the Deer's. The Tail is short, and turns up again. The Legs are pretty thick, and the Feet are cleft like those of the Goat. Chuse your *Oriental Bezoar* in one whole Stone, that is smooth, shining, and of a pleasant Smell, inclining to *Ambergrease*. They divide into *Laminae*, or Flakes, when broken; of a grey or olive Colour. The largest are the most valued by the Curious, but it is of little Moment in Physick of what Size they are. It contains in it some small Matter of volatile Salt, that is sulphurous and oily. It is esteem'd as a great Cordial, proper to promote Sweat, and drive away malignant Humours. The Dose is from four Grains to ten or a dozen in any Cordial, or other proper Liquor.

The second *Bezoar* is call'd *Lapis Bezoar Occidentalis*, or *Occidental Bezoar*. It is a Stone usually larger than the Oriental, but is not so smooth and shining, of an ash or whitish Colour. They separate likewise into *Laminae*, but a great deal thicker than the Oriental *Bezoar*, interspersed with a great many small Points on the Inside. This has the same Virtues with the other, but much weaker, being given to half a Dram.

The third Sort is call'd, *Bezoar Porci*, sive *Lapis Porcinus*, or the *Hog Stone*. It is almost of the Bigness of a *Filbert*, differently shap'd, and usually of a whitish Colour, inclining something to a greenish, but now and then of other Colours. The Outside is smooth. They find this Stone in the Gall of certain Swine in *India*, in the *Molucco's*, and several other Parts. The *Indians* call them, in their Language, *Mastica de folio*; the *Portuguese*, *Pedro de Vassar*, or *Piedra de Puerco*; and the *Dutch*, *Pedro de Porco*. It is very scarce, and much valued, so that they sell it in *Holland* for four hundred Livres, and more. This Stone is

fought after by the *Indians* with a great deal of Industry.

They use it as a great Preservative against Poison, and reckon it very proper to cure a Malady they call *Mordoxi*, which comes from an irritated Bile, which causes those that are seiz'd with it to be worse than them that have the Plague. It is likewise us'd for the Small-pox, epidemical Fevers, in hysterical Cases, and for the Stoppage of the Courses. It is pretended to excel *Oriental Bezoar*. When they use it, they let it stand infusing some Time in Wine and Water, that it may impart its Virtue; then they drink the Infusion before Meals: It has a little Bitterness, which is not unpleasant. There are those who have these Stones hung in little gilt Chains, to put into any Liquor for the Infusion. They keep them in little golden Boxes.

The fourth Sort of *Bezoar* is call'd *Bezoar Simia*, or the *Bezoar from the Ape*. It is a Stone as big as a Hazel-Nut, round or oval, and blackish. They say it is taken from a kind of Ape that is found particularly in a certain Island of *America*. This Stone is very scarce and dear. It is esteem'd more sudorifick and proper in malignant and pestilential Cases, than all the other *Bezoars*. The Dose is from two Grains to six. The Signification of the Word *Bezoar*, according to some, is a *Counter Poison*: According to others, the Overcomer, or Master of Poisons.

[The Creature which affords us the true *Oriental Bezoar* is the *Gazella Indica*, *cornibus rectis, longissimis, nigris, prope caput tantum annulatis*. *Raii Synopsis Animal.* 79. *Caper sive Hircus Bezoarticus*. *Aldr. de Quad. bisul.* 755. *Capra sive Hircus Bezoarticus, vel potius Pazaharticus*. *Jons. de Quad.* 56. It is an Animal of *Persia* and the *East Indies*, and is call'd by the *Persians*, *Paser*. The *Bezoar* Stone is found in its Stomach. The true *Oriental Bezoar* is of different Colours, but commonly of a brownish olive Colour. It has as a Nucleus always some heterogeneous Substance, round which it has gradually form'd itself in Strata, like the human Calculus. The Perfume of these Stones is adventitious, for they have naturally no Smell.

Many have judg'd the *Bezoar* we use generally fictitious; and doubtless the great Price has encouraged many to counterfeit it, and Counterfeits are often sold instead of it; but the common Reason for judging it fictitious, which is, that but one Stone is produced by one Animal, and therefore we could not be furnish'd with the Quantities we have, genuine, is a very weak one; for as there have been found by *Camillus*, in one emaciated Stag sixty Stones, why should we tie ourselves to the belief that this Species of Animal, which is more subject to breed them than any other in the World, should produce but one in each Individual? Our

Author

Author's Account of his particular Stone is not at all to be regarded, for the very Stone he describes here, has been since examined by Men of greater Penetration, and found to be no other than a Fruit of the *Palma Cuciofera* I. B. *Nux Indica minor Cordi*, in which either our Author, or some Body he had suffered to impose on him, had very artfully inclosed a *Bezoar* Stone.

The Occidental *Bezoar*, is produced by the *Mazama seu Cervus. Hern. 324. Caguacu-Ete Marc. 235. Caguacu-apara ejusdem, sive mas et faemina. Raii Syn. An. 90.* The Creature is found in *Mexico* and *Pern*, the Stone is of a looser Texture, and more brittle than the Oriental *Bezoar*, and not so smooth on the Outside, containing like it a heterogeneous *Nucleus* within. It has the Virtues of the other, but in a smaller Degree.

The German *Bezoar*, or *Ægragopilas*, *Mont. Ex. 5.* is found in the Stomach of the *Dorcas sive Rupicapra. Ald. 725. Rupicapra, Raii Syn. Animal. 78.* This Stone is lighter than the others, and has for its *Nucleus* the Fibres, &c. of Herbs undigested by the Stomach of the Animal, on which are usually two *Strata* of a coriaceous Substance.

The *Pedro de Porco* is found in the Gall Bladder of the Porcupine. *Hystrix. R. S. An. 206. Jonsf. Quad. 111.* It is light and rough. The *Bezoar* Mineral is the *Terra Sicula Bezoardicum Minerale. Mont Exot. 14. Lapis Bezoar fossilis. De Laet. 114.* It is found in *Sicily* and other Places. There is also a chymical Preparation of Antimony of this Name. And it may be added to these different *Bezoars*, that the Stone of the human Bladder is called by some, *Bezoar Microcosmi.*]

4. Of the Musk Animal.

Pemet. **T**HE Musk Animal comes very near to the Figure and Colour of a Hind, only it has a longer Body, according to the Skin which I have seen in the Possession of the *Sieur Nicholas Rondan* at *Roan*. There are a great many of these Animals in the Kingdoms of *Tonguin* and *Boutan*, and in divers Parts of *Asia*.

That which we call Musk is a corrupted Blood, which is collected under the Belly of this Animal, after the Manner of an Imposthume; when it is ripe, the Beast, by Instinct, goes to rub himself against a Tree to break it. And this corrupted Blood, being dried in the Sun, acquires a strong Smell that is very disagreeable; which it ought to retain when it is pure, and has not come thro' the Hands of the *Jews* in *Holland* and other Places, or of other Persons, who sophisticate it with Earth, dried Blood, and other Contrivances.

They are much abused who are made to believe that the Musk is the Testicles of the Animal; and

that he gelds himself when he is pursued, as knowing that he is to be taken for his Testicles. This has been imagined, only because the People who put it into Bladders, cut them out in that Shape. Others would have it that the Musk is bruised Blood, which is produced over all the Body of this Animal, by beating it with Clubs; and that they afterwards wrap it up in Pieces of the Skin, which they cut and sew into the Fashion of Testicles. But since both these Originals of Musk seem very odd, I think it best to relate what *Mr. Tavernier* has written in his second Volume, *Page 316.* that the Reader may incline to which Opinion he likes best.

“ The best Sort and greatest Quantity of Musk comes from the Kingdom of *Boutan*, from whence they carry it to *Patna*, a principal City of *Bengal*, to traffick with the People of that Country. All the Musk that is sold in *Persia* comes from thence; and the Merchants who trade in Musk, had rather that you should give them yellow Amber or Coral for it, than Gold or Silver, because those are the two Things of greatest Esteem amongst them.

“ After they have slain this Creature, they cut the Bag which is under the Belly, about the Bigness of an Egg, and lies nearer to the genital Parts than the Navel; then they take the Musk out of the Bladder, which at that Time is like clotted Blood. When the Country People would adulterate it, they put the Liver and Blood chopped together instead of some of the Musk they take out. This Mixture produces in the Bladders, in two or three Years Time, certain little Animals which eat up the good Musk; so that you shall find a great deal of Damage when you come to open them. Others, when they have opened the Bladder, and taken out as much Musk as they can, so as not to be perceived, put in small Bits of Lead to render it more weighty. Merchants who buy and transport it into other Countries are more easy under this Deceit than the other, because those little Animals do not engender in it; but their Deceit is still more difficult to be discovered when they make little Purses of the Skin of the Belly of the Animal, and sew them up so neatly with Threads of the same Skin, that they may seem to be the real Bladders, and fill these Purses with that which they have taken out of the real Bladders, together with the fraudulent Mixture they add to it, which is a Deceit the Merchants can have no Knowledge of. If they tie up the Bladder as soon as they have cut it off, without giving Air and Time for the Perfume to lose a little of its Force by Evaporation, which it generally does whilst they draw out that which they take from it;

“ when

“ when any one puts the Bladder to his Nose,
 “ Blood will burst forth immediately by the Force
 “ of the Perfume, which ought of Necessity to be
 “ tempered, to render it agreeable, without hurt-
 “ ing the Brain. The Perfume of this Animal,
 “ which I brought to *Paris*, was so strong, that it
 “ was impossible to endure it in the Lodging; it
 “ gave all the People the Head-ach, so that it was
 “ removed into the Out-House, where some of
 “ my Servants cut the Bladder; which however
 “ did not hinder the Skin from always retaining
 “ some of the Perfume. They do not begin to
 “ find this Animal till about the 56th Degree;
 “ but in the 60th there is great Number, the
 “ Country being full of Forests. In the Months
 “ of *February* and *March*, indeed, when these
 “ Creatures have endured much Hunger in the
 “ Climate where they are, by reason of the Snows
 “ that fall in great Quantities, so as to be ten or
 “ twelve Feet deep, they come from the North,
 “ Southward to the 44th or 45th Degree, to eat
 “ the Blades of the green Rice; and it is at that
 “ Time the Country People lay Nets for them
 “ in their Passage, and kill them with their Staves
 “ and Arrows. Some People have affirmed to
 “ me that they are so lean and feeble, thro’ Hun-
 “ ger, at that Time, that they suffer themselves to
 “ be run down. There must be a prodigious
 “ Quantity of these Creatures, since each has but
 “ one Bladder; and the largest commonly being no
 “ bigger than a Hen’s Egg, which cannot furnish
 “ above half an Ounce of Musk; and sometimes
 “ there must be three or four Bladders to make
 “ one Ounce.

“ The King of *Boutan*, fearing lest the Tricks
 “ which are played with the Musk should spoil
 “ the Trade for it (since it can be had from
 “ *Tunquin* and *Cochin China*, tho’ it is dearer there
 “ because it is not taken in such large Quantities)
 “ has some time since commanded that none of the
 “ Bladders should be sewed, but all brought open
 “ to *Boutan*, which is the Place of his Residence,
 “ there to be inspected, and sealed with his Seal.
 “ All those which I bought were of this Kind.
 “ But notwithstanding all the King’s Precautions,
 “ the People have a cunning way to open them,
 “ and put in their small Bits of Lead (as I have
 “ said) which the Merchants endure the more
 “ patiently, because it does not spoil the Musk,
 “ but only deceives them in the Weight.”

Musk is to be chosen in very dry Bladders, the
 Skin that covers it very thin, and with but little
 Hair upon it, because there are some Bladders
 where there is more of the Skin and Hair than
 the real Commodity. Let it be of a brown Co-
 lour, which is the Mark of the right *Tunquin*
 Bladder, which is much more esteemed, and better

than that of *Bengal*, which is covered with Skins
 that have white Hair upon them. When the
 Musk is separated from its Cover, that should be
 made Choice of, which is of a dark Colour; of
 a strong and unsupportable Smell; of a bitter
 Taste, and has as few hard and black Clots in it
 as is possible; and being put upon the Fire, will
 burn and be consumed. Yet this last Mark is not
 of general Use, but serves only to discover that
 which is mixed with Earth; for the Fire will
 not manifest the Falsity of that which is counter-
 feited with Blood. Others will have it, that the
 right Musk ought to have an Oiliness when pressed
 with the Fingers. But as this is a Commodity
 very difficult to be known, and the most cunning
 are often deceived in it, it has given Occasion
 to many Persons to mix it, and therefore one
 ought not to strive for a good Pennyworth, but
 to buy it of honest Merchants, and reject all the
 Sorts of Musk which Hawkers carry about to sell,
 both in and out of the Bladders, it being nothing
 but Dirt a little scented; to cover their Roguery.
 They pretend to sell it cheap, because they brought
 it out of the Country themselves, or that they
 have stole the Customs, which are indeed very high
 upon it; or that they are Mariners, and the Cap-
 tain has given it to them for their Wages; and
 by that Means put off their false Drugs, selling
 more for twenty Pence than an honest Merchant
 can afford for twenty Livres, and getting enough by
 it at their cheap Price too. As for that which
 is mixed with Earth, it is easy to know it; because
 if a little be put upon lighted Charcoal, if there
 is any Earth it will remain; but, on the contrary,
 if it be mixed with the Blood and Liver of the
 Beast, there will remain only a little whitish or
 grey Dust; this however is to be rejected, as ought
 also that which is of a pleasant Smell, because it
 does not get that agreeable Scent, but by the Ad-
 dition of some Drugs that open the Parts of it.

The Use of Musk is not very frequent in Phy-
 sick, because it is very improper for Women; but
 it is much used by the Perfumers; and if the De-
 mand for it be not so great as formerly, it is be-
 cause Perfumes are not so much in Use as they
 have been heretofore.

Moschus, or *Musk*, is a Kind of bilious
 Blood, fermented, coagulated, and almost *Leaven*.
 corrupted, which is taken from a thick
 Bladder, or Pouch, as big as a Hen’s Egg, which
 is found under the Belly towards the genital Parts
 of a wild four-footed Animal, called *Moschus*,
Moschus, *Dorcus Moschus*, *Capreolus Moschus*, and
Gazella Indica. They say it is of the Shape and
 Colour of a Hind; is produced in the Kingdoms
 of *Boutan*, *Tunquin*, and several other Parts of
Asia.

Asia. It frequents the Woods and Forests where they hunt it; and when they have killed it, they cut out the Bladder, or Cod, which is under the Belly; then they separate the coagulated Blood, which they dry in the Sun, and reduce to a Kind of light Substance, almost powder'd, of a dark reddish Colour. This acquires a strong disagreeable Smell. They then wrap it up in Bladders for Transportation. And this is the Musk we use.

There are a prodigious Number of Animals that yield Musk, chiefly in the Kingdom of *Boutan*. They catch them usually at Spring-Time, or in the Beginning of Summer: For after they have been almost starved, during the Winter, because of the Snows that fall in those Countries, ten or twelve Feet deep, they come to seek for Food; their Blood being then in a great Heat, and violent Fermentation. The Musk they then get is likewise strong and spirituous, which is the Reason they do not expose it for some Time to dry in the Air, lest it should quite destroy the Smell. They cannot take a great deal of Musk from any one of these Animals, because they have but one Cod a-piece, which does not yield above three Drachms of Musk dried. Others say, that the Bag, during the Rutting of this Creature, has an Abscess formed in it; which when fully ripe makes the Beast itch and rub himself against Stones, Rocks, and Stumps of Trees, 'till he breaks it; and it is this Corruption that, when it is spilt and dried in the Sun, becomes Musk.

There is no Impossibility in this Story; but yet it is not to be thought, as most of the Naturalists, both ancient and modern, have done, that all the Musk we have is taken from these Abscesses. For is it likely that they can follow the Track of the wild Beasts, through the Woods and Forests, to gather up this Matter which they have thrown sometimes into Places inaccessible, into Mire or Sands? If we had no other Musk but that, it would be much scarcer and dearer than it is; besides, a dried Abscess would be of another Colour than Musk, for it would be of a light grey.

When you buy Musk in the Bag, you should chuse that which is dry; let the Bag be thin, and little Hair upon it; for the more Hair and Skin there is, there will be the less of the Musk. Let the Hair be of a brown Colour, for that is the Mark of *Turkish* Musk, which is most esteemed. The Musk of *Bengal* is wrapt up in Bags, with white Hair upon them.

When the Musk is separated from the Bag, it must be kept in a leaden Box, that the Coolness of the Metal may hinder it from growing too dry, and losing its most volatile Parts. That Musk is to be made choice of that is sufficiently dry, of a reddish Colour, strong Scent, and

a bitter Taste. It is almost all Sulphur, or Oil, and volatile Salt. It has very little Earth in it. The Scent is nauseous and disagreeable when you smell to a great deal of it at a Time, but sweet and pleasant when some few Grains are mixt with a Quantity of other Ingredients. The Reason of the Difference is this; when it is in a larger Quantity, the Parts evaporate so much, that they oppress and tire the olfactory Nerve; whereas, on the contrary, when there are but a few volatile Particles, they only affect it with an agreeable Titillation. Musk has been used much more amongst the Perfumers and Confectioners, than it is at present. People are afraid of it now, because it raises the Vapours, especially in Women.

It fortifies the Heart and Brain, refreshes the decayed Spirits; it resists Poison, dissolves and rarifies gross Humours, increases Seed, and expels Wind. The Dose is from half a Grain to four Grains. It is good for Deafness, being put into the Ear, with a little Cotton. They apply it to the Womb, to allay the Vapours in hysterical Fits, upon the rising of the Womb, called the Mother.

[The Animal which produces the Musk is the *Capra Mosel. aliis Cervus odoratus. Chart. Exer. 10. Capra Moschus. Aldr. 743. Animal Moschiferum Raii Synop. An. 127.* It is common in the Northern Part of the *Mogul's* Country, and is not properly either of the Goat or Stag kind, tho' something like both.

The Musk is an excrementitious Blood, which has undergone several Alterations in its Follicle, and is either taken out by Incision, or rubbed out by the Animal, or cut from its Body, with the Bag. The *Arabians* use it as a great Cordial, but it has been very little used with us, because found hurtful to Persons of both Sexes subject to the Vapours. Of late, however, great Cures have been performed by large Doses of it; a Scruple at a Time, given in some spirituous Vehicle, as Arrack, or strong Cinnamon Water.

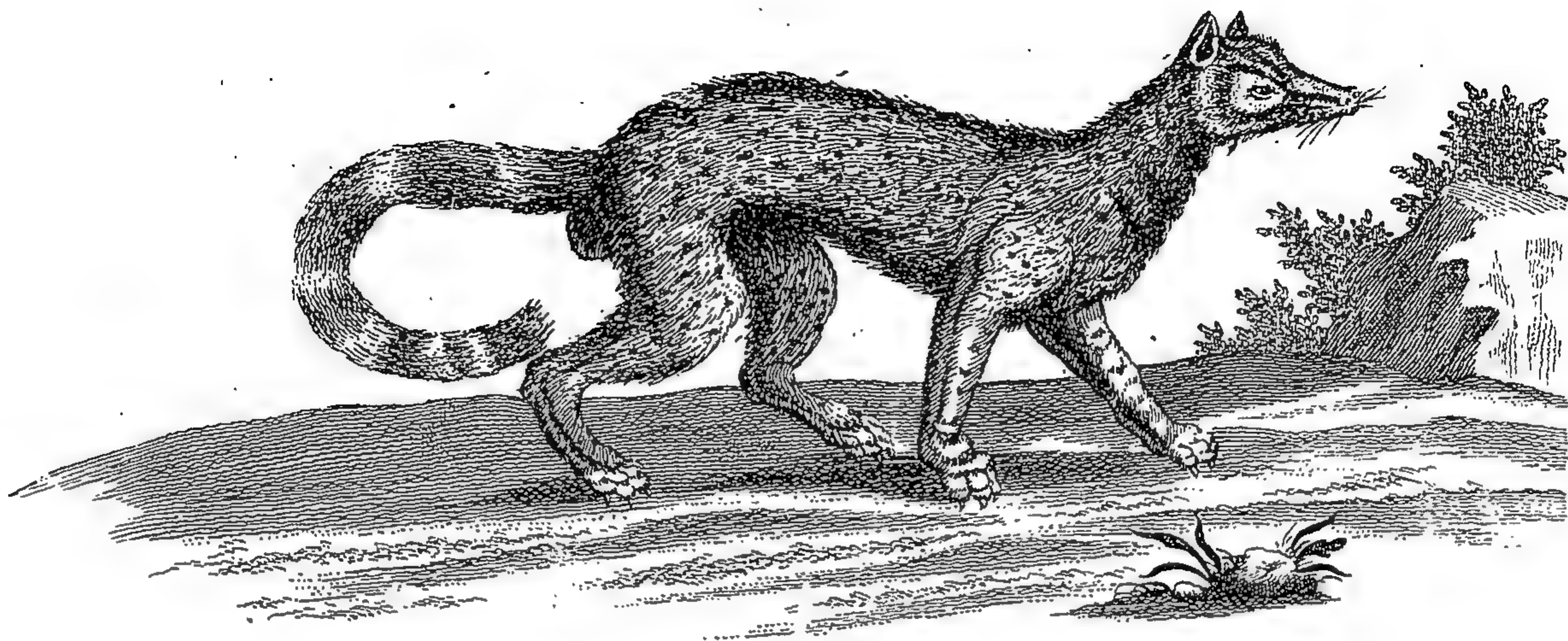
Cotton impregnated with it, is found admirable in that Kind of Deafness, which is owing to a too great Thickness, and Viscidity of the Fluids.]

Of the Civet-Cat.

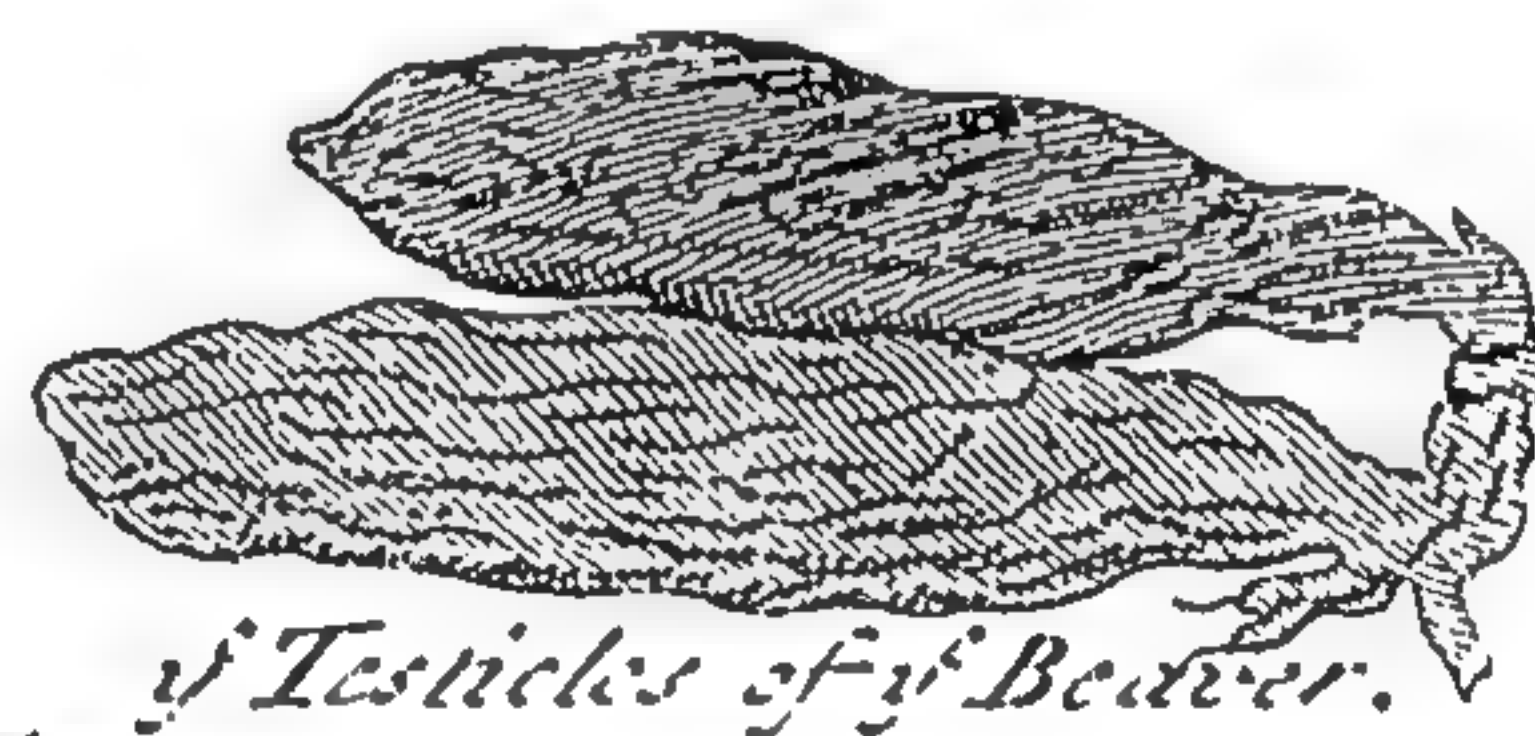
THE *Civet* is a thick unctuous Liquor, *Pomet.* found in a Pouch which is under the Tail, and near the *Anus* of a Beast like a *Spanish Cat*, but much more fierce, and very voracious. This Animal has from hence the Name of the *Civet-Cat*, and is very common in *China*, the *East* and *West-Indies*, and likewise in *Holland*.

Authors differ extremely concerning the Nature of this Animal, and that which we take from it. But as it is not my Purpose to repeat what they have written, I shall only relate what I myself have

of Animals
5
The Civet Cat.



♂
The Beaver.



♂ Testicles of ♂ Beaver.



have practised upon a *Civet-Cat* that I kept alive a Year together, whose Figure I have given you. It was brought from *China* by a Person in the Retinue of the Ambassador of *Siam*, who gave it to one of my Friends, who made a Present of it to me in the Year 1688. Having kept this Creature some Days, I perceived that the Wall and Bars that enclosed it were continually covered with an unctuous Moisture, thick, and very brown, of a very strong and disagreeable Smell: Notwithstanding that during all the Time I kept this Animal, I took Care to have the Civet gathered every other Day, not without some Trouble and Hazard, because it put the Creature to some Pain or Apprehension of it; and having done so for some Months, I had about the Quantity of an Ounce and a half; but it is certain, that if the necessary Care had been taken, and the Beast could be hindered from rubbing itself, I might have got a great deal more; but I neglected it, because the Colour of the Drug did not please those I shewed it to, though it was well scented, and as good at least as that which is brought from *Holland*.

There is no Reason, therefore, to think that the Civet is the Dung or Sweat of this Animal, as some have believed, who have also told us, that the Animal affords no Civet till it has been well beaten; and that the more it is enraged, the more Civet it lets down under its Belly, and between its Thighs; which is contrary to the Truth, as may be remarked from what I said before. And as to the white Colour of that which comes from *Holland*, the Reason of it is, the *Dutch*, who make a great Trade of Civet, feed their *Cats* with Milk and Eggs.

Besides the Civet from *Holland*, there comes some from *Brazil* which is brown, agreeable both in Smell and Colour to that I gathered from my Animal; they give this the Name of *Guinea* or *Brazil Civet*.

There is a third called *Occidental Civet*, of which, because it is so common, and has no Relation to this Chapter, I shall say nothing; and therefore remit the Reader to the several Authors that have treated of it, it being no other than human Dung.

Civet is to be chose new, and of a good Consistence, that is, that it be neither too hard nor too soft, of a white Colour, of a strong Smell, and very disagreeable. This Commodity is as difficult to be known as Musk. It is for this Reason the *Hollanders* put little printed Certificates upon their Pots of Civet, to give it the Credit of being pure and not falsified; and that it is such as it came out of the Pouches of the *Civet-Cats*; but the best Way is to buy it of

honest Merchants, without relying upon the printed Papers, or the Colour, since it may be of a golden Colour, and yet be good; for if it be kept a little Time, though the Pots be never opened, the Top, how white soever it were before, will become yellow, and of a gold Colour; and as it grows old will be still the browner.

Many Persons affirm, that if a Paper is rubbed with Civet, and one can write upon it, it is an infallible Mark that it is natural, which I found to be false, having tried it several times. But, besides the Care that must be taken to have it from honest People, one must look whether in keeping it does not grow musty and decayed; because that which is mixed will grow mouldy, both at Top and Bottom, especially where there is any vacant Space, and will have a rank Scent, and very disagreeable. When this happens to People who have falsified it, and it becomes unfit for Sale, as well for its ill Colour as its Smell, which is different from the right Civet, they colour it with some Drugs, and so pass it off under the Name of *Guinea Civet*, which will easily be found out by its reddish Colour, which they commonly give it. Never trust therefore to the *Dutch* or *French* Prints they put upon it, which serve only to cover their Knavery, and to get twenty or two and twenty Livres an Ounce for that Commodity, which does not stand them in perhaps forty Pence.

Civet is of some Use in Physick, but is most in Request with the Confectioners and Perfumers. It serves to perfume and give a Scent to other Ingredients. This Drug is to be used with a great deal of Discretion; for if one exceeds, though never so little, the just Quantity that should be used, instead of a pleasant Smell, it renders one that is very disagreeable.

Zibethum, *Zibetha*, *Civeta*, *Zepetium*; in *English*, *Civet*, is a liquid Matter, or Lemery. congealed Liquor, unctuous, of a Scent that is very strong and unpleasant. The Beast from whence it is taken is called in *Latin*, *Hyana*, *Catus Zibethicus*, *Felis odoratus*, in *English* the *Civet-Cat*. It is a Creature much bigger than a Cat, and less than a Badger, having something in it that resembles a Fox; the Face is sharp like a Martin, with a black Nose; its Ears short and round; its Eyes blue; the Leg and Foot black, more broad and open than a Cat's, but the Claws not so crooked, nor hid in the Feet, but its Teeth are more terrible; it has Spots all over the Body; the Hair of the Legs and Feet is very fine and soft, but in other Parts harsh, and standing upright. It is a neat and cleanly Beast, and therefore the Place it is kept in must be washed every

every Day. Merchants buy the young ones, and breed them tame, feeding them with Bran, Rice-Milk, hard Eggs, Bread, Flesh, &c. so that a Cat that is large and gentle, may come to be valued at between four and eight Pound Sterling.

The best *Civet* is said to be made in *England*; but great Quantity is sent from *Holland*, with printed Certificates into all Parts of *Europe*. The best is of a clear, fine, lively whitish Colour. The *West-Indian*, *Barbadian*, and *African Civets* are next in Goodness; but the blackest is the worst, which generally comes from the *East-Indies*.

It is a valuable Commodity, so that an Ounce, when pure, has been valued at forty Shillings. It is often adulterated with Ox-Gall, Storax and Honey. It is much to be preferred to Musk, because the Scent is finer. It is of a subtile and clear Nature, and contains a great deal of Oil and volatile Salt. It comforts the Spirits, and is good against all Diseases of the Head, Brain, and Womb. The following Mixture is good to perfume Cordial Waters and Powders for the fore-mentioned Intentions. Take one Ounce of *Civet*, Musk in fine Powder, six Drams; Ambergrease two. *Civet*, put up in a Pessary, or Piece of Sponge, prevails against hysterical Fits and Vapours; put into the Ears with a little Cotton, it helps the Difficulty of Hearing. If that Mixture be ground with an equal Quantity of the Yolk of an Egg, it so opens its Body, as to make it mix exquisitely with an aqueous Substance; also with twelve or sixteen Ounces of Spirit of Wine, you may draw a most admirable Tincture for the aforesaid Purposes; and being anointed upon the Glans, just before Coition, it is said to cause Impregnation, and cure Barrenness. *Civet* is anodyne and good for the Colick in Infants, if applied to the Navel.

[The Creature which produces the *Civet*, is the *Catus Zibethicus* Pit. Mem. 98. *Animal Zibethicum Raii Syn. An.* 178. *Zibethicum Animal Americanum Rech. in Hern. Hyæna Veterum Bellon. Obs. Ed. Clus.* 94.

The *Civet* is an excrementitious Substance, naturally separated and collected in Bags of a glandulous Substance, both in the male and female Animals; the Bag in the Male is placed between the *Penis* and *Testicles*, and in the Female between the *Uterus* and *Anus*.

Its external Use in hysterical Cases, which was once very common, is found to be not only useless but hurtful, and therefore wholly laid aside at present.]

6. Of the Castor, or Beaver.

Pomct. **T**HE *Castor*, or *Beaver*, called by the *Latins*, *Castor* or *Fiber*, is a

four-footed Animal, ranged by Naturalists amongst the amphibious Creatures that live equally on the Land and in the Water. At Land it feeds upon divers Fruits, Leaves, and Barks of Trees, and especially of the Willow-Tree; and in great Rivers upon Shell-Fish, and such other Prey as it can catch. This Variety of Food is the Reason why its hinder Parts to the Ribs have the Taste of Fish, and they are eaten as such upon Fasting Days; and all the rest has the Taste of Flesh, so that it is not used but at other Times.

The *Beaver* has a Head almost like that of the Mountain Rat, but bigger, and proportionable to the Bulk of his Body, which is thick and gross, about the Size of a Pig of six Months old: They have pretty large Teeth; the under standing out beyond their Lips three Fingers Breadth; the upper about half a Finger, being very broad, crooked, strong, and sharp, growing double, very deep in their Mouths, bending circularly, and of a yellowish Red. They take Fishes upon them as if they were Hooks, and will gnaw asunder Trees as thick as a Man's Thigh, and are able to break in Pieces the hardest Bones; wherever the *Beaver* bites he never loses his Hold till his Teeth meet together. The Bristles about their Mouths are as hard as Horn; their Bones are solid; the fore Feet are like a Dog's, and their hinder like a Swan's. Their Tail is covered over with Scales, being like a Soal, about six Inches broad, and ten Inches long, which they use as a Rudder to steer with, when they swim to catch Fish. And tho' their Teeth are so terrible, yet when Men have seized them by the Tail they can govern them as they please. The *Beaver* of *Dantzick* has Hair upon four or five Inches of the Tail, and the rest of it is scaly. The whole Skin of the *Beaver* is covered with two Kinds of Hair, both very soft, but the one much longer than the other; the shortest is a kind of fine Down, and is what is used in making Hats.

The *Beavers* make themselves Houses of square Timber, which they gnaw down with their Teeth, almost as even as if it were sawed, and almost as equal as if it were measured. They lay these Pieces a-cross, and each is let down by large Notches into the other; so that having dug a Hole for their Foundation, they build several Stories, that they may go higher or lower, according to the Rise or Fall of the Water.

I shall not dispute the Existence of those little Testicles, furnished with all the Vessels necessary for Generation, which the Royal Academy have discovered some Years ago in the Thighs, and near the Groin of a *Beaver* which they dissected. But

But having never seen these little Testicles placed in the Rank of Drugs, nor any Things sold for *Castoreum*, but that Part of the Animal which the Ancients called *Fibri Testes*, without troubling myself whether these are true Testicles or no, since this Treatise is not about Generation, it will be sufficient for me to give a just and exact Description of those Parts of the Animal, which we sell under the name of *Castoreum*, and which will be the more necessary, as I know no Part of an Animal more commonly sophisticated.

That which we call *Castoreum*, is a fleshy Substance, contained at the Bottom of two pretty large Pouches, equal, distinct, placed Side-ways, one by the other, and wrapt in one common Bag, fixed below the Fundament of the Animal, between the two Thighs, and covered by the common Skin that encloses the whole Belly, and there outwardly representing two Testicles, like those of a Boar; which though they lie within, yet may be distinguished through the Skin, and taken in the Hand, although they do not hang down as the Testicles of other Creatures. Having opened the hairy Skin, you meet with the common Pouch, and in that the two others distinct from one another, which contain the Matter which we call *Castor*.

The Custom is to tie these two Pouches as they are found, and hang them in a Chimney till they are well dried, and the Matter contained in them be grown hard, and the outward Pouch has contracted a brown Colour.

After this, when these internal Pouches are opened, there is found in the lower Part of them a Matter fleshy, solid, and pulverisable, of a Colour like Cinamon, intermixed with very thin Fibres and Membranes, and of a Scent that is extremely strong. There is likewise found in each of these lesser Pouches, a little above the fleshy Matter, another Pouch, distinct, but much less, and fastened to that which encloses it; it contains an oily Moisture, of a Scent as strong as the former. This being new is like the best Honey before it is coagulated, but becomes of the Colour and Substance of Suet as it grows old.

These are the true Marks of the *Castor* that is sold, to be used in Treacle, Mithridate, and divers other cephalick and hysterical Compositions; and these I can avouch to be true, having bought and sold a great deal, and knowing that no Person of Understanding will contradict me. But I can also speak with the more Certainty upon what Mr. *Charas*, who dwelt near the *Rhofne*, and those Places where these Animals are taken, has assured me; namely, that he bought of a Peasant's Daughter the Pouches of a *Beaver*, just taken

from the Body, which he hung up in the Chimney, being then of the Colour of Flesh, and appearing like Testicles, which Shape they retained when dried; that they then weighed fourteen Ounces; and being cut open, had all the inward Parts, as I have described them: That he afterwards got a live *Beaver* from the same Place, which a Countryman brought him in a Tub, which was in all Things conformable to the Description I have given; and especially as to the Pouches, which were situated in the same Place as those of a Boar, and were of so large a Size, that they were more than an Handful. The *Beavers* being of different Sizes, their Pouches are proportionable; so that when they are dried, we have them from four to sixteen Ounces.

These Animals generally inhabit Caverns in the Banks of large Rivers, among others the *Rhofne*, the *Lifere*, the *Oise*, in *France*; they are also found in *Spain*, *Savoy*, and *Italy*. But the greatest Quantity are taken along the *Elbe*, and the great Rivers of *Germany* and *Poland*; as likewise in *Lithuania* and *Muscovy*, the Lakes of *Canada*, and *Hudson's Bay* in *America*; but it is almost a general Rule, that the Fur is finer, longer, and softer, according to the Coldness of the Region they are bred in.

The Dearthness of *Castor*, and the Avarice of wicked Persons, have induced People to counterfeit it, which they do by mixing the Powder of the true *Castor* with Gums that there is no Necessity of naming, and putting them in the Skins which have contained the Testicles of Lambs and Goats; then they hang them in the Chimney, and when they are dry and hard, pass them off for true *Castor*. But it is easy to discover the Cheat, by cutting the Pouches, and looking for the Marks I have given you; of which the most essential is, that you will find none of Fibres and small Skins intermixed in them. And whereas the true *Castor*, when pounded, will pass through a Silk Sieve, and leave several little Membranes upon the Silk; the Gums will not pass, but remain clotted, without any Appearance of the little Skins before-mentioned.

I shall pass over that which several considerable Authors have reported of the *Beaver*, that being pursued by the Hunters, he bites off his own Testicles, and leaves them for his Ransom; seeing he can no more bend his Body, so as to come at them with his Teeth, than a Boar can do; and besides, being always near great Rivers, it is easy for him to escape by plunging into the Water.

Castor, diversly prepared, is recommended in Diseases of the Brain and Womb, both inwardly and outwardly. The oily Substance is likewise

used in Ointment, and in the Composition of Oil of *Castor*.

There was a *Beaver* dissected in the Academy of Sciences, which was three Foot and an half long from its Nose to the Extremity of its Tail. His greatest Breadth was twelve Inches, and he weighed above thirty Pounds. His Colour was brown, and very shining, inclining to a dark Grey. His longest Hair was an Inch an half long, and fine like the Hair of one's Head; the shorter was an Inch, and as soft as the finest Down; his Ears were round and very short, without Hair within, and outwardly like Velvet. He had four cutting Teeth, such as Squirrels and Rats, and other Creatures have that are used to gnaw Things. These Teeth below were above an Inch long; and the upper ones, which come something forward, were not directly opposite, but so disposed as to work in the Nature of Sheers, passing one by another, being very sharp at the End, and cutting like an Ax; their Colour was white without, and of a bright Red within, inclining to a bastard Saffron Colour. It had sixteen Grinders, eight of a Side. The Claws behind were joined by a Web, like those of a Goose; but those before were without such Membranes, not unlike the Mountain Rat, and they use them for Hands, as Squirrels do. Their Nails are cut sloping, and hollowed like a Pen to write with. The Tail has more of the Nature of Fish than of a terrestrial Animal, and tastes like it. The Tail is covered with Scales of the Thickness of Parchment, about a small Straw's Breadth, of an irregular hexagonal Figure, which form an *Epidermis*, or Skin that joins them together. It was eleven Inches long, and of an oval Figure, four Inches broad at the Root, and five in the Middle. This helps him in swimming, and to bear his Mortar that he makes use of in building his House, which he has sometimes of two or three Stories. His Testicles were not fastened to the Back-bone, as *Matthiolus*, *Amatus*, *Lusitanus*, and *Rondelet* have told us, but they are hid in the Sides of the *Os Pubis*, about the Groin, and do not appear without, any more than the Penis, nor can they be cut out without killing the Creature. It had four large Pouches, situated at the lower Part of the *Os Pubis*: The two first were of the Figure of a Pear, and had a Communication with one another; they had an inward Covering, which was fleshy, of an ash Colour, streaked with a great many white Lines, which had several Folds, like those of the outer Skin of a Ram's Scrotum, and were two Inches long; there was found in them a greyish Matter, of a fetid Scent, and very thick; and this is the *Castoreum* so much spoken of.

Choose the *Castor*, or *Castoreum*, of *Dantzick*; it being heavier and of a stronger Scent, is preferable to that of *Canada*, which is generally dry, not clean, and has very little Smell. Let the Pouches be weighty and fleshy; and see that they be not filled with Honey, or any other Counterfeit, which is easily distinguishable; as those which are so filled up, are bloated, smooth, shining, and, if pressed a little, send forth a liquid and stinking Matter, of the Consistence of Honey; whereas the others, on the contrary, are hard and weighty, and when they are cut, full of little Strings, and have a Smell that is strong and piercing.

The Skin of the *Castor* is esteemed the finest and softest Fur in the World, and is a valuable Commodity for making *Beaver* Hats. In *Poland* they line all Sorts of Garments with it, as making the best Shew, and enduring the longest of any Fur. The Hair should be long, soft and silky; and that of the fat *Castor* is preferable to the lean. The Skin being burnt to Ashes, the Powder applied to the Nose, stops Bleeding.

The Fat of the *Beaver* is used as an Ointment against the Palsy, Convulsions, Hysterical Fits, Apoplexy, and Falling-Sickness. Take half a Pound of *Beaver's* Fat, Oils of Rosemary, Nutmegs, Amber, and Mace, of each one Dram.

The general Virtues of *Castor* are in strengthening the Head and Nerves, being prevalent against the Biting of Serpents and mad Dogs. It helps Forgetfulness caused by Sickness, cures Convulsions, Pains and Noise in the Ears from cold Humours, Coughs, Catarrhs, and Distillation of Rheum, provokes the Terms, causes a speedy and easy Delivery to a Woman in Travail, bringing away both Birth, and After-birth, or the dead Child if that be the Case. It has also been found effectual in Epilepsy, Apoplexy, Fits of the Mother, Gripings of the Belly, and Colick. It is prepared several Ways; but a good compound Powder may be prepared with it as follows: Take pure *Castor* in fine Powder, two Ounces; Saffron, Pepper, Bay-berries, Tartar vitriolated, Camphire, of each one Dram; mix them. The Dose is from one Dram to four Scruples, in any proper Vehicle.

The *Castor*, or *Beaver*, is a four-footed Animal, amphibious, for it can live by Land or Water. It is about the Bigness of a Pig of six Months old: Its Head is of the Shape of a Mountain Rat: Its Teeth are large, strong, sharp, and cutting: Its Body short and hairy: Its Skin is covered with a very soft Hair, of which they make Hats: Its Tail is about a Foot long, an Inch thick, four Fingers broad, without Hair, scaly, grey, hollow towards the Roots,

7
The Elk

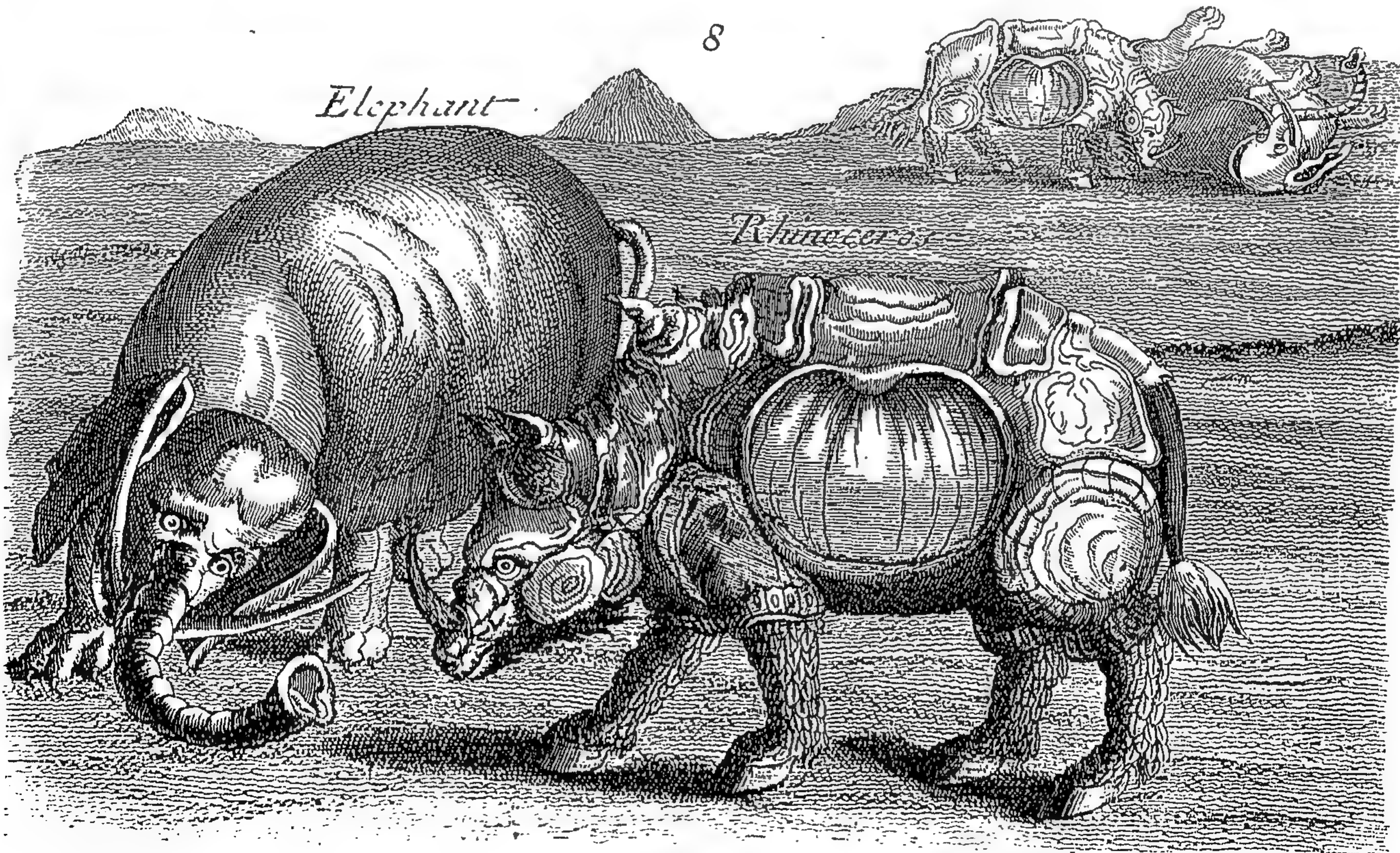


The Elk falling down in an Epileptick fit being pursu'd by 2 Hunters.

8

Elephant

Rhinoceros



Root, strengthened by Joints running into one another: Its Legs are short, those before resembling a Dog's, and the hinder one's a Swan's: It feeds upon Fruit, Leaves, and Bark of Trees; and upon Fish when it is in the Water. It is half Flesh, and half Fish. The Tail and hinder Legs are sweet like the Tuny, having a solid Fat. Some of the Tails weigh four Pounds, and are accounted a great Dainty both boiled and roasted.

If you would take hold of a *Beaver*, you must seize on his Tail, and so secure him, that he cannot turn to bite you; and by the Hold you have of his Tail you may govern him as you please.

Amongst the *Beavers* some are accounted Masters, some Servants. They generate in the Beginning of Summer, and bring forth in the End of Autumn. They are cleanly in their Houses; for the making of which, they draw the Timber on the Belly of their Antients, they lying on their Backs. They love their Young. They use their fore Feet like Hands. And their Cry is like that of an Infant. Their Testicles are placed at the lower Part of the Belly, between the Thighs, near the Fundament, but they lie within, under a fleshy Skin, which is hairy, and covers all the Belly; however they may be distinguished outwardly, and handled. When they would have these Testicles, they open the fleshy hairy Skin, under which they find the first common Purse, which contains the two others in the Shape of little Purses, or the real Testicles of an Animal; then they tie them by the Neck, and hang them in the Chimney, leaving them till they be dry and hardened, and the outward Purse is of a brownish Colour, and this is what they call *Castor*. If you then open these inward Purses, you will find a Matter which is hard, brittle, of a yellowish Brown, intermixed with many loose Membranes of a strong and piercing Odour; and there is another Pouch which encloses an unctuous and fattish Liquor, very like Honey, which as it grows old, comes to the Colour and Consistence of Suet, and is of as strong a Scent as the Parts that are more solid.

Some of these Purses are larger, some less, according to the Beast they are taken from. They are best cured by taking them out, cleansing them purely, and drying them well in some shady Place; which when it is well done, they will keep seven Years. It is adulterated by Gum *Ammoniacum*, Blood, and Powder of Kidneys, &c. as also whole Kidneys put up into little Bladders; but may be discovered by being black, mouldy, and not apt to crumble; whereas the genuine is of a fetid, strong, and unpleasant Smell, and of a strong, sharp, biting, and bitter Taste, and of a brittle Substance.

The *Castor* contains a great deal of exalted Oil and volatile Salt; it attenuates viscous Humours, strengthens the Brain, provokes the Terms in Women, allays Vapours, resists Putrefaction, causes Perspiration; is proper for Epilepsy, Palsy, or Apoplexy, and is a good Medicine for Deafness.

The unctuous Liquor which is found annexed to the Testicles of the *Beaver* has the same Virtue, and is strengthening to the Nerves.

[The Creature from which we have the *Castor* of the Shops, is the *Castor*. *Aldrov. de Quad. dig. 276. Castor sive Fiber, Raii Syn. Anim. 209.* It is found both in the *East* and *West-Indies*, and in many other Parts of the World, as *Poland*, *Russia*, &c.

The *Castor* we use is the inguinal Glands of this Animal, taken both from the Males and Females, which are of different Bignesses in different *Beavers*, and are situated in the Groin, under the Testicles, covered with a thick Membrane, and filled with an oleaginous Liquor, which in Time hardens into a pulverisable Substance.

The *Russia Castor* is greatly preferable to that of any other Country, and the Creature from which it is taken, though of the *Beaver* kind, is very different from the common *Beaver* of *Europe* and *America*.

It is an admirable Medicine in all hysterical Cases. The Dose is from three Grains to ten in Powder, and from thirty to fifty Drops in Tincture.]

7. Of the Elk.

THE *Elk* is a wild Creature that is *Pomet*. commonly met with in cold Countries, especially in *Sweden*, *Norway*, *Canada*, and other Parts. This Animal is about the Height of a Coach-horse, or a large Ox; the Head is very thick, the Eyes are bright and sparkling; the Horns are spreading and large, like those of the Deer; the Legs long and slender; the Feet black, and divided at the Hoof, as those of the Ox or Cow; as to the Hair, it is soft, and of a blackish Yellow. I shall not stand to relate what abundance of Authors have said concerning this Animal: But shall only observe, that the Name *Eland*, or *Elan*, given by the *Germans*, signifies Misery; as well because that this Animal lives nowhere else but in desolate Places, as Woods, Forests, and the like, as because he is very subject to the Falling-Sickness; and as soon as he is attacked with this Disease, he fails not to put his left Foot to his left Ear, to cure himself thereof; which has given Occasion to the Antients to believe

believe that the *Elk's* Claw, or the Covering upon the left Foot, was a Specifick for the Epilepsy.

Of all the Parts of this Animal, there is none used in Medicine but the left hind Foot, which is called *Ungula Alcis* in the Shops; the Buyer must take care, that what is offered to Sale be not the Foot of some other like Animal, which it is difficult enough to distinguish, and that the Leg or the Skin be with the Foot, to see by the Hair whether it be the left hind Foot. You ought to take care likewise, that it be not worm-eaten, which often happens when they are old; but on the contrary, let the Claw be heavy, black, shining, and very smooth. It is of some Use amongst the Apothecaries, being an Ingredient in many Compositions for the Diseases before-mentioned.

Some People eat the Flesh as Venison. The Skins are dressed by Tanners, with Fish-Oil and Alum, to make Breast-Plates of, and to shelter from Rain. They may be known from a Deer or Hart's Skin, by blowing through them; for the Breath will come through, as in Buff. The Nerves are used against the Cramp, by binding the affected Part with them. The Horns are said to be anti-epileptick; but the chief Virtue is said to lie in the Hoof, being taken inwardly in Powder, or worn in a Ring, or hung about the Neck, so as it may touch the Skin, or taken, being rasped or filed like Harts-Horn.

Alce, five Alces, or the *Elk*, is a four-footed wild Beast of a large Size, betwixt a Deer, an Ass, and a Goat, having great branched Horns, bending toward the Back on the plain Edge, the Teeth or Branches of them being upwards, solid at the Root, and round like a Hart's Horn, but much broader. They grow as it were out of their Eye-lids, are very heavy, weighing at least twelve Pounds, and are about two Feet long, which Horns they lose every Year. It is headed something like a Horse, has long Ears, a broad Forehead, and an upper Lip so great, that hanging over the nether, it so much falls over, that it cannot eat for it but by going backwards. It is a long-backed Beast, with a short, or almost no Tail, and a cloven Hoof like the Hart; his Hair is almost of the same Colour, and sometimes of a brown Russet. He has a strange kind of Mane, lying both on the Top of his Neck, and underneath his Throat, where it sticks out like a Beard, or curled Lock of Hair.

This is a melancholy Beast, and frequently afflicted with the Falling-Sickness, continuing in the Pangs thereof till the Hoof of the left Foot touch the left Ear; wherewith rubbing the Part, the Creature is thereupon immediately delivered. In the Northern Climes they live in Herds, and are

taken by Hunting; for upon the slightest Wound, they are so timorous a Creature, they immediately fall down, and yield themselves a Prey to their Enemies. In *Sweden*, *Livonia*, &c. they are taken, tamed, and used for Beasts of Burden; for they are both swift and strong, and serve well to draw in Sledges upon the Ice and Snow, in *Russia*, *Scandinavia*, and other Northern Parts.

[The *Ungula Alcis* is the Hoof of the *Alce*, *Raii Syn. An* 86. *Gesn. de Quad.* 1. *Aldrov. de Quad. Bisulc.* 886. The Creature is of the Stag kind, and there are generally Numbers of them seen together. The Hoof is good in the Epilepsy, as it contains a volatile Salt like that of the Horns, &c. of other Animals.

The Story of its curing itself of a convulsive Distemper by the Touch of its left hinder Hoof is an idle Tale; and for medicinal Use the Right Hoof is therefore altogether as good as the Left, and those of the fore Feet as those of the Hinder.]

8. Of the Elephant and Rhinoceros.

THE *Elephant* is an Animal that in Height and Thickness exceeds all the Beasts of the Earth. It is a very understanding and tractable Creature, and is armed with a long, fleshy, and nervous Trunk, which serves instead of an Arm or Hand upon many Occasions. It has likewise the Discretion to extend and bend its Body so as to go through a Gate many Feet lower than its Body, provided it be wide enough for its Bulk. I do not believe it will be necessary to give a very particular Description of this Animal, because there is scarce any considerable Town in *Europe*, but where this Creature has been seen; only it may not be amiss to inform you, that the *Elephants* come from the Eastern Parts of the World, but more particularly from the Great *Mogul's* Country. They are the Males only that are armed with great Teeth, or Tusks, at the upper Part of the lower Jaws, for the Females have none such; these are called Ivory, of which several fine Works are made; as well as Medicines and other necessary Things for Life.

I shall not trouble myself to give an Account of all that has been writ by the Antients; but only take notice of some few Things that may be entertaining to the Reader, if they afford him no other Instruction. *Ambrose Parey* gives an Account of two sorts of Dragons which destroy the *Elephants* after this manner: These Dragons wind themselves about the Legs of the *Elephants*, and then thrusting their Heads up their Nostrils, they put out their Eyes, sting them, and suck their Blood till they are dead.

Pliny

Pliny affirms he saw an *Elephant* which learned the *Greek* Letters, and was able with his Tongue to write a *Greek* Sentence; and in the Plays of *Germanicus Cæsar*, Elephants danced after Instruments of Musick, keeping Time and Measure. The *Elephant* is said to have a kind of Religion; for it worships, reverences, or observes the Course of the Sun, Moon, and Stars: For when the Moon shines, they go to the Waters where they may see her; and when the Sun rises, they salute or reverence his appearing, by holding up their Trunk to Heaven in Congratulation for the Light. By a kind of natural Instinct they have some Foreknowledge of their own Death; and when any of their Kind dies, they cover the dead Carcase with Dust, Earth, and green Boughs. They have a passionate Love to their Masters and Keepers, and seldom forget to revenge an Injury on those that have offended them; as they are always grateful to their Benefactors. *Aynou* saith, an *Elephant* was cheated of the half of his daily Allowance by his Overseer; by chance the Master came and served him, upon which the Beast divided it into two Parts before his Master, laying one of them aside: By this the Fraud of the Servant was detected.

Pliny says, that an *Elephant* which was duller than ordinary, was found by his Master in the Night practising Things, which he had taught him in the Day with much Difficulty, and many Blows. It is reported they will live two or three hundred Years, if not prevented by extraordinary Accidents. They only breed in hot Countries, and scarcely can bear Cold and Winter Weather. As to their Teeth, they are often found very large. An *Elephant's* Tooth was sold to a *Venetian* Merchant about twelve Feet long, and three Feet Diameter; and it weighed so heavy, that he could not lift it. *Vertomannus* saith, that he saw in the Island of *Sumatra* two *Elephants* Teeth, which weighed 336 Pounds. When these fall off, which is about every tenth Year, they bury them in the Earth with their Feet.

The Ivory, which the *Latins* call *Ebur*, is the Teeth, or rather the Weapons, or Arms of the Male *Elephant*; the best and whitest of which come from *Angola*, *Ceylon*, and other Parts of the *East-Indies*. The Trade of Ivory, or *Elephants* Teeth, is very great in *France*, as well as *England*, for many Purposes. There is a Spirit and volatile Salt made from it, by the Retort, which is highly esteemed in Diseases of the Heart and Brain. The Shavings of Ivory are used with those of Hartshorn in Ptisans: they are cooling, drying, and astringent, a pestilential Antidote, moderately binding, and strengthening the Bowels. Take Filings, or Rasplings of Ivory, half a Dram; Powder

of Man's Skull, Bezoar Mineral, of each fifteen Grains; mix them for a Dose in the Epilepsy, or any malignant Fever. Mixed with *Japan* Earth, and Jesuits Bark, it is good for the *Fluxus Albus*, Bloody Flux, Weakness of the Back, &c. Likewise Cochineal and Saffron being added, it becomes an excellent Cordial.

Ivory Black is made of burnt Ivory, that is taken from the Fire whilst it retains its Blackness, is then pounded, and with Water made into little flat Cakes or Troches for the Painters, which, when good, ought to be very finely ground, soft, and brittle. The Apothecaries, or others, who distil Ivory by the Retort, instead of throwing the burnt Ivory that remains in the Retort away, may pound it, and make it into little Cakes, or Troches, as I have said before, and then sell it to those who buy Ivory Black, or else put it upon a good Coal Fire, to reduce it to a white Powder, which is called *Spodium*, or burnt Ivory.

Spodium, or Ivory calcined to a Whiteness, is also Ivory burnt for the Purpose, that it may be serviceable in Medicine. The best is that which is white within and without, heavy, easy to break, in fine Pieces, the least full of Dirt and Filth that may be. They reduce this to an impalpable Powder, upon a Marble, and make it into little Cakes or Lumps, and this is what we call prepared *Spodium* of Ivory. The same Virtues are attributed to this, as to Coral and other Alkali's. The Antients, besides Ivory, burnt Canes or Reeds; and the Canes thus reduced to Ashes, were also called *Spodium* or *Antispodium*. The Ivory *Spodium* strengthens the vital Parts, resists malignant Fevers, prevent Micarriages in Women, helps Conception, cures Vapours and Fits, and likewise kills Worms in Children.

The *Rhinoceros* is a four-footed Animal, of the Size of a Bull, whose Body resembles most the wild Boar. He is so called, because of the Horn that grows out of his Snout, which is black, about a Foot and a half long, hard, pyramidal, solid; the Point or Tip whereof turns up again towards the Crown of the Head. This Animal is covered all over with strong Scales. In like manner the Legs are scaled to the Hoofs, which are parted into four distinct Claws.

This Animal is an Enemy to the *Elephant*, and, in fighting with him, fixes his Horn in the soft Part of the *Elephant's* Belly; for which Cause it is said that an *Elephant* will run from him. When they fight they whet their Horn before-hand against Stones. They are not fierce against Mankind without great Provocations. The Cry is like the Grunting of a Hog. The *Indians* make Bottles of their Skins to put Liquors in. The Powder being

being infused in Wine, or taken by itself to a Scruple, is good against malignant Diseases. The Horn, which is chiefly used as the Unicorn's, is said to be good against all contagious and malignant Fevers; for being a high Alkali, both fixed and volatile, it encounters and destroys the malignant Acids, which stir up and influence the most pernious Diseases. It is reckoned a singular Sudorifick.

Elephas, sive Elephantus, is a Quadruped, *Lemery*. esteemed the biggest in the World, of a monstrous Shape: The Head is great and deformed; the Mouth so large, that a Man's Head may as easily enter into it, as a Finger into the Mouth of a Dog: Their Eyes are really large in themselves, but appear small in Comparison, and their Ears little, in Proportion to the rest of the Body, not much unlike the Wings of a Bat. The Teeth on either Side are four, to eat with and grind their Food, with two others, one on each Side, which hang forth beyond the rest. It has a Trunk at the End of the Snout, called *Proboscis, seu Tuba, seu Manus Nasuta*, which is a large hollow thing, hanging from his Nose, like Skin, downwards, serving instead of a Hand. When he feeds, it lies open to draw in both his Meat and Drink; by this he receives of his Keeper whatever he gives him, and in Swimming draws through it his Breath. It is crooked, gristly, and inflexible at the Root, next the Nose, where it has two Passages, one into the Head and Body, by which the *Elephant* breathes, the other into the Mouth, by which he receives his Meat. With this he fights in War, and is able to take up a small Piece of Money from the Ground, or any other Place; with this he can draw up a great Quantity of Water, and shoot it out, to the annoying of his Enemy.

He is said to have four *Venters*, and Lungs four Times as big as an Ox. His genital Member is like that of a Horse, but less; and the Testicles lie inward about the Reins. The fore Legs are much longer than the hind Legs, of short Joints, and of equal Bigness both above and beneath the Knees; the Ankle-Bones are very low; he bends his hind Legs as a Man when he sits, but not both together, and so leaning on one Side, sleeps most commonly against a Tree. Their Feet are round like Horses, and as broad as a Bushel, having five distinct Toes upon each Foot, which are very little cloven, but without Nails. They are for the most part of a Mouse Colour, or darkish Brown. The Skin is harder on the Back, and softer on the Belly, without any Covering of Hair or Bristles, unless here and there one scatteringly: It is so tough, that a sharp

Sword or Iron cannot pierce it. The Tail is like an Ox's, but without Hair, except at the End. The Sound or Noise they utter has the most Resemblance to braying, and seems as if always hoarse.

The *Rhinoceros*, called so from carrying his Horn upon his Nose, is a large four-footed Animal, that looks as if he was something of the Boar Kind, only that he is much larger, and more lubberly and dull. His Head is thick, and enclosed in a sort of flat Cowl; for which Reason, according to the Rev. Father *Le Comte's* Memoirs of *China*, the *Portuguese* have given him the Name of *Moine des Indes*, or the *Indian Monk*. By reason of his Horn so advantageously placed, he becomes formidable to the Bufflers, Tigers, and Elephants, which he engages sometimes. This Animal is found in the Desarts of *Africa*, in *Asia*, at *Siam*, and in *China*, where they feed upon the Branches of hairy and prickly Shrubs and Trees. The Horns, the Nails, and Blood, are all used in Medicine, containing in them a good deal of volatile Salt and Oil. They are useful to resist Poison, strengthen and fortify the Heart, procure Sweat, stop Fluxes of the Belly, and are good against all contagious Diseases. The Dose is from a Scruple or two, either in Infusion or Powder, which drunk in Wine, purifies the Blood, and is a good Preservative against infectious Air.

[Ivory is the Tusks of the Elephant, *Elephas, Raii Syn. Animal.* 131, &c. The best Ivory we have is from the Island of *Ceylon*. The Shavings of it boil into a Jelly like those of Hartshorn, and have the same Virtues; and the *Spodium ex Ebore* is now never made, because the burnt Hartshorn is found to be the same Thing, in regard to all its Virtues.

The *Rhinoceros* I have already had occasion to speak of, in the Chapter of the *Unicorn*.]

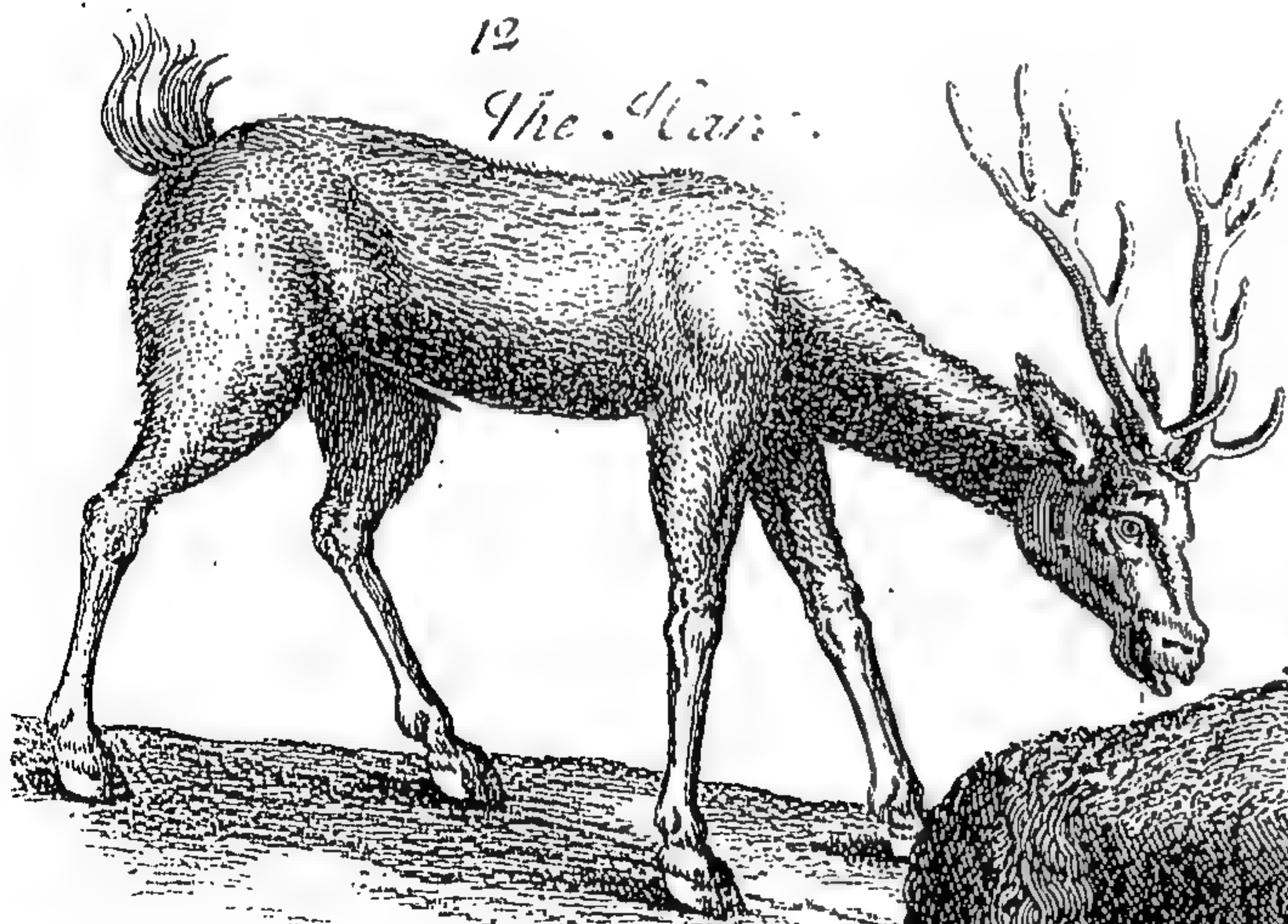
9. Of the Camel.

THE *Camel* is a gentle domestick Animal, whereof there are great Numbers throughout all *Africa*, and particularly in *Barbary*, and the Desarts of *Getulia* and *Libya*, and they are the greatest Riches of the *Arabs*. Those of *Africa* are better than the other, because they will travel forty or fifty Days together upon Barley only, and ten or twelve without eating or drinking at all. The Female carries her Young eleven Months. When the *Camels* travel in the Caravan, the Drivers of them whistle and sing; for the more they encourage and please these Animals, the better they march. Their Food is Grass, Hay, Thistles, Barley, Oats, Rushes, and Herbs. There

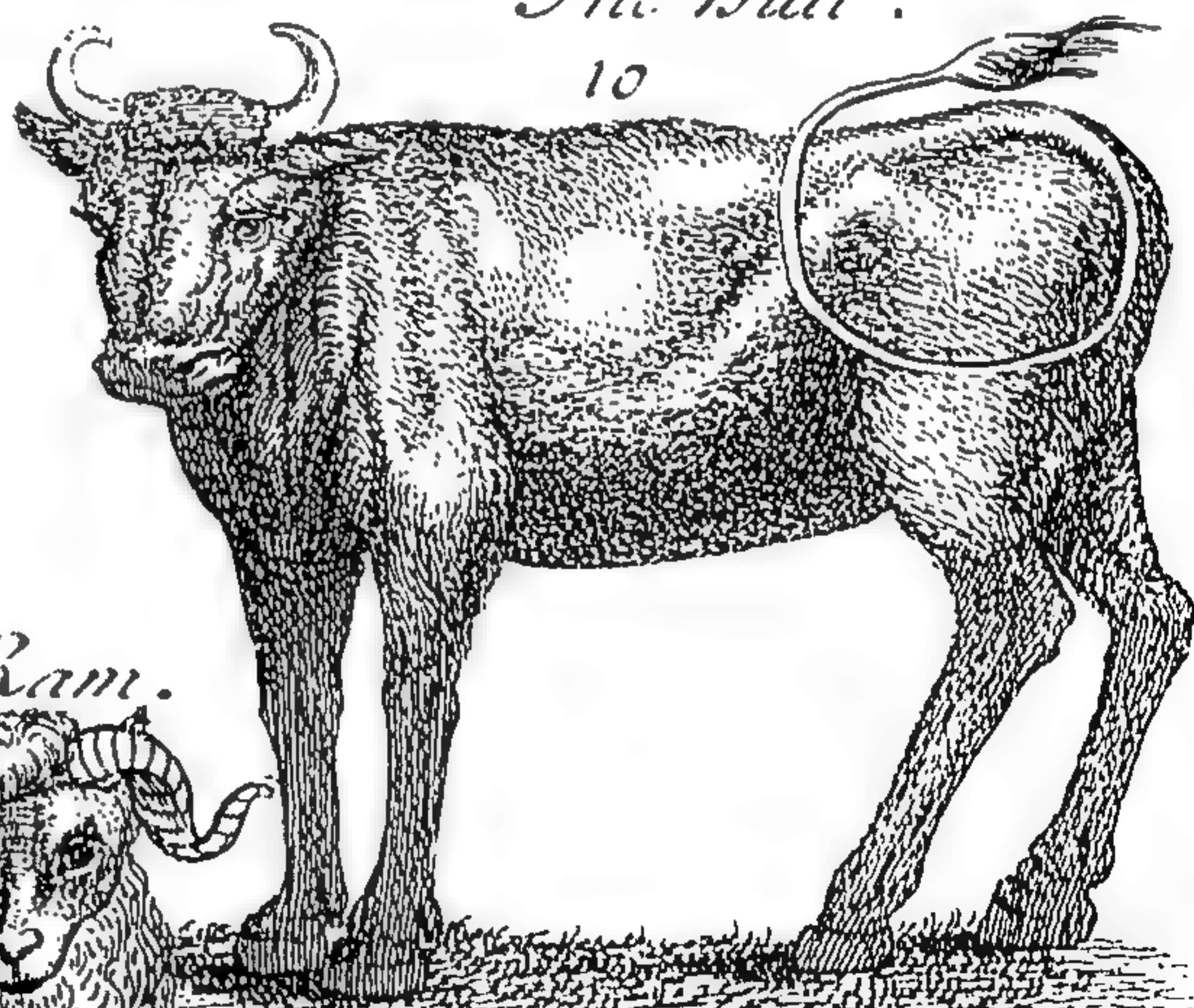
The Camel. 9.



12
The Hare.



The Bull.
10



11
The Ram.



There are three Kinds of *Camels*; those called *Hegin* are the biggest, and will carry a thousand Weight. The second Kind are what they call the *Bechet*, that have two Bunches on their Back, and are the best to ride upon; but these are only to be met with in *Asia*. The third they call *Dromedaries*, which are the smallest and finest, and fit for no other Use but riding upon, and are so swift, that they will travel thirty five or forty Leagues a Day, and continue so to do nine or ten Days, through the *Desarts*, with little or no Sustenance.

When these Animals are to be loaded, they strike them over the Knees and upon the Neck with a Stick, and they kneel upon the Ground to receive their Burden; and when they are loaded, upon the Sign being given, they rise presently with it. These Creatures bear Hunger and Thirst with great Patience. Some say they carry Water in their Stomachs a long time to cool them, by means of their large Ventricle, about which they find a considerable Number of Bags inclosed in the Tunicles or Coats thereof, in which it appears these Animals keep Water in reserve. And hence it is that some Persons affirm, that when the *Turks* go with the Caravan, to *Meccha*, and Water is scarce, they kill their *Camels*, to drink the Water they have in their Stomachs. It is from these Animals we have the Hair that is called by their Names, and of which several fine Stuffs are made; the best of which is that on the Back, and the least full of white Hair: In short, the *Camel* of all Animals is the most gentle, the least chargeable to keep, and brings the greatest Profit to his Owner.

Of natural Sal Ammoniack.

Sal Armoniack, or rather *Natural Ammoniack*, is a Salt white within and without, of a saltish Taste, pretty like common Salt, only that it is more pungent. It used to be brought us from *Arabia* or *Lybia*; but at present we have very little from thence, but the *Venetians* and *Dutch* have found out a Way of making a Composition that near resembles it in its Virtues; there is however a great deal of Difference in the Figure betwixt the natural and artificial.

When the *Turks*, and other People of *Asia* or *Africa*, travel with their Caravans, their *Camels*, passing thro' the *Desarts*, urinate upon the Sands; and the Sun shining fierce on the Urine, fails not to dry it up, and reduce it into a white Mass; the Truth of which I am convinced of by a Piece which Mr. *Tournefort* gave me the 6th of *March*, 1693, whose Figure is here represented, and

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marked A, and which I keep by me as a great Rarity. This Piece is crySTALLIZED; that is to say, it appears on the Top like Needles, as Salt Petre refined, and is hollow on the under Side, where there is also some Sand sticking to it, which shews that the Salt is sublimed by means of the Sun, and rises up from the Sands, that are very hot.

The Antients universally agreed, that there was a natural *Sal Ammoniack*; that this Salt was found in the *Lybian* Sands, and that it was made from the *Camels* Urine which travelled to the Temple of *Jupiter Ammon*, from whence it took its Name: And others say that it comes from the Greek Word *Ammi*, which signifies Sand; and therefore we ought not, as is commonly done, to call it *Armoniack*, but *Ammoniack*. There is besides this, another natural *Ammoniack*, or rather more properly speaking, an artificial one, which is made after the same Manner as we make *Salt Petre*. It is, drawn from a kind of Earth, or saltish Scum, that ouzes out of old Caverns, and the Chinks of Rocks, betwixt *Labor*, *Thanusseri*, and *Tzerhint*. But as these two Salts are almost unknown to us, and we meet with but very little if any of them, we must content ourselves with that brought from *Venice* or *Holland*; but the last is chiefly what comes to *Paris*, especially in Time of Peace.

Of artificial Sal Armoniack.

This *Sal Armoniack*, or rather *Acrimoniack*, or, according to some, *Acrimomial*, is a Mass or Composition of several Things, made in Shape of a Pot-lid, which the *Venetians* or *Dutch* make, according to the Relation of several Authors, from human or animal Urine, common, or Sea Salt, and Chimney Soot, boiled all together, and sublimed into a Salt, and formed into Cakes, as we have it now brought to us. Some have assured me that *Sal Armoniack* was likewise composed of Blood, which I cannot affirm, having never seen it done.

They used heretofore, to send us from *Holland* and *Venice*, a *Sal Armoniack* in the Shape of a Sugar Loaf, which was much finer than what we have in Cakes at present.

That *Sal Armoniack* is the best which is clearest, whitest, and most transparent, and which being broke, there appear in it as it were Needles, and that which is the driest; but reject that which is black both on the Upper and Under-side, and which being broke, is almost all grey or black. Which is occasioned by the Avarice of the Makers, who raise up too much of the Matters it is composed of, by too violent a Fire. That

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which

which comes from *Venice* is the purest; but that from *Antwerp* and *Holland* is the most common Sort. The Use of it is very considerable for several Trades, besides the many excellent Preparations made from it in Chymistry. It serves the Dyers, Goldsmiths, Founders, Pin-makers, and almost all that work in Metals, and the Farriers. And it is so acrid and piercing, that being dissolved in *Aqua fortis* or Spirit of *Nitre*, it gives them a Power of dissolving Gold, which before they could not touch.

It is aperative and sudorifick, resists Putrefaction, and is good in Quartan Agues: the Dose is from a Scruple to half a Drachm. It is also good in Gargarisms, for the Quinsey, and in Eye-waters for Dimness of Sight; but in these Cases it must be used with Discretion.

In the Sublimation of this artificial Salt, according to the Composition mentioned before, the volatile alkalious Salts of the Urine and Soot do raise up as much of the Acid, or Sea Salt, as they can hold; so that it appears this Salt consists of two different Natures and Properties, to wit, of Acid and Alkali, fixed and volatile, and accordingly two different Spirits, or Salts, may be drawn from it, viz. a volatile alkalious Spirit and Salt, and an acid Spirit and fixed Salt.

To purify Sal Armoniack.

Dissolve it in a sufficient Quantity of Water, filterate the Dissolution, and in a Glass Vessel either evaporate till it is dry, by which you will have a pure white Salt, or evaporate till a Pellicle arises; and set it to crySTALLIZE according to the usual Way. You may also purify *Sal Armoniack* by Sublimation, thus: Take *Sal Armoniack* in Powder, and Sea Salt decrepitated, or rather Smiths Scales; of each equal Parts, mix them, and put the Mixture into an earthen Cucurbit; and having placed it in Sand, fit to it a blind Head; give a gentle Fire at first, and encrease it by little and little, until you can see the *Sal Armoniack* rise up like Meal, and stick to the Head and uppermost Part of the Cucurbit, and continue the Fire till nothing more will ascend: The Vessel being cold, gather these Flowers with a Feather, and keep them in a Glass close stopped. They are only *Sal Armoniack*, and their Virtues the same with the former, being given only to one Scruple. Thus purified from Sea-Salt, the Flowers are white; but from Iron Scales they are of a yellowish Colour; the latter being much the better, and more successful against Quartans; and both of them are very powerful Agents in all chymical Operations, for extracting the Sulphurs of Metals and Minerals, both by the

Help of Sublimation, and otherwise. This *Sal Armoniack* purified, is also used outwardly against Gangrenes, and to consume superfluous and corrupted Flesh. It prevails in a Gargarism against the Quinsey and Inflammation of the Throat, and in a Bath it gives Relief in the Gout, especially if Cloths be made wet therewith and applied.

Of volatile Spirit of Sal Armoniack.

Take *Sal Armoniack* and quick Lime in Powder, six Ounces of the first, and one Pound of the latter; mix them in an Iron Mortar; add three or four Ounces of Water; put them quickly into a Retort, the half whereof is empty; set it in a Sand Furnace, with a very large Receiver, luting the Junctures close; begin the Distillation without Fire for a quarter of an Hour; then add the Fire, increasing it by little and little, till no more Spirits come forth. Take off the Receiver, and immediately turning away your Nose, put the Spirits into a Glass, which keep close stopt for Use; you will have four Ounces of Spirit or better. This is stronger than that made with Tartar, being endowed with the fiery Particles of the quick Lime; which being mixed with Spirit of Wine, prevents the coagulating; whereas that made with Tartar will cause a *Coagulum* upon the Spot. This Spirit prepared either Way, corrects and hinders Putrefaction, more than most other Things in the World; and powerfully resists the Poison or Venom of the Plague or Pestilence; and is very profitably given against all putrid Fevers. The volatile Spirit and Salt are more subtle and penetrating, and of a kinder Taste and Smell than those which have been extracted out of plain Urine, because they were not fermented and depurated by common Salt. This Spirit is good in all hypochondriacal Cases, Suffocation of the Womb, &c. but chiefly against Diseases of the Head; as Vertigo, Lethargy, Epilepsy, Deafness, Palsy, Trembling, and the like. In a word, it is good in all Diseases proceeding from Corruption, or Obstruction of Humours.

Of the acid Spirit, and fixed Salt of Armoniack.

After the Spirit is drawn off with Tartar, instead of Lime, there remains at the Bottom of the Vessel seven Ounces, and better, of a white fixed Mass, from which you may distil an acid Spirit, as you do Spirit of Salt; for indeed it is a Kind of Spirit of Salt, or little other; otherwise you may dissolve it in Water, filtre and crySTALLIZE, so will you have a very good Salt against intermitting

permitting Fevers, given from ten Grains to thirty. This is as agreeable an Acid as any we have; and is very proper to allay the Heat of Fevers, to provoke Urine, and stop the too violent Fermentations of the Blood. There is another Way of making the fixed Salt, by the Means of Egg-Shells, or quick Lime, which they reduce with the former Mass, into a clear transparent Body, like Chrystal, which is a very good Caustick, but easily runs to Water; for which Reason, those who are desirous to keep it, put it in a Glass Bottle well stopped, so that no Air can enter. This fixed *Sal Armoniack* being reduced into a Liquor, is what some call, tho' improperly, Oil of *Sal Armoniack*; and is indeed an Oil *per deliquium*, which several Persons keep for the Resuscitation of Quick-Silver.

Camelus, or the *Camel*, is a very tall *Lemery*. tractable Beast, that is of mighty Service to all the People of *Asia* and *Africa*. His Neck is long, the Body very thick and broad, having a Bunch on his Back, and some Kinds two. The Tail is like that of an Ass; his Buttocks are small, considering the Bulk of his Body, and the Legs very long. The Female goes with Young eleven, and sometimes twelve Months; and when the young Ones arrive at an Age and Size fit for Service, they load them with Burdens as we do Horses in *Europe*. But as this Animal is very high, so that it is difficult to load them, they are taught, while young, to kneel down upon their Knees to receive their Burdens; and this is the Reason that they become, in Time, so callous and hard, that they have scarce the Sense of Feeling on that Part.

These Camels are the usefulest Creatures in *Africa*. The *Arabs* make great Advantages of them, because they will live hard, and endure both Hunger and Thirst with much Ease, and wonderful Patience. These Beasts are great Lovers of Singing, and other Musick; so that those who travel long Journeys with them, sing or pipe all the Way to make them go the faster and more chearfully. There are three Sorts of them; the first, or largest sized, is called *Hugium*; the second, more peculiar to *Asia*, is named *Becheti*; and the third is *Dromas* sive *Dromedarius*, the *Dromedary*, which the *Arabs* call *Raguabil*; and is a small, thin, lean Creature, in respect of the others.

All the Parts of the *Camel* yield a great deal of volatile Salt and Oil; the Flesh being eat, provokes to Urine; the Grease or Fat is emollient, softening, and resolutive, proper for the Piles or Hemorrhoids: The Brain being dried and beat to Powder, is good for the Epilepsy. The Gall

mixed with Honey, is reckoned proper for the Quinsy; the Milk loosens the Belly, procures an Appetite, relieves and gives Ease in an *Asthma*. The Blood is said to be proper to incline Women to conceive, if the Region of the Womb be fomented therewith after the menstrual Flux. The Urine is good to cleanse the Teeth, and make *Sal Armoniack* of. The Dung is vulnerary and deterfive, and the Milk and Flesh good to eat, so that the *Arabs* feed upon them.

[The *Camel* used as a Beast of Burthen in the *East*, is the *Camelus*. *Jonsf. de Quad.* 67. In regard to this Creature and the *Dromedary*, it may be observed, that Authors have been very much divided in their Opinion about which of them it is that has two, and which but one Bunch on its Back: But the Truth certainly is, that the *Camel* common in *Asia* and *Africa*, and constantly used there as a Beast of Burthen, has only one Bunch; and that the *Dromedary*, which is a very scarce Animal, and only found in the Possession of great Persons, has two Bunches on his Back, and is never used otherwise than as a Beast to ride on, as it is light, and travels very swiftly.

The Blood, Gall, Dung, and Urine of the *Camel*, are all commended as great Medicines in several Intentions, but are never used at present, except in the Share the two last of them have in the *Egyptian Sal Armoniack*.

In regard to the *Sal Armoniack*, the true natural *Libyan* Kind, said to be produced by the Action of the Sun upon the *Camel's* Urine on the Sands, is now wholly unknown among us, nor can we any where find a certain Proof that there ever was such a Thing; for what the Antients describe under this Name, was a fossile Salt of the Nature of *Sal Gemm*. But however that be, we have at present three Kinds of crude *Sal Armoniack* in the Shops, the common, the *Egyptian*, and the *Italian*, of which the first is almost the only kind now used, and kept by the Druggists. The first or common *Sal Armoniack* is made at *Venice*, in *Holland*, and in other Places, with five Parts of human Urine, one Part of common Sea Salt, and half that of Wood Soot, boiled into a Mass, and sublimed into the Form we see. The second is brought from *Grand Cairo* and other Parts of *Egypt*, and is made with the Soot of *Camels*, Cows, and Pigeons Dung (which is the common Fuel of the poorer People of *Egypt*, when made up into Cakes with chopt Straw and dried) mixed with Salt, and *Camels* Urine, and sublimed into flat Cakes in Glass Vessels made for that Use: And the third, or *Italian Sal Armoniack*, is formed by the Soot and Smoak of burning Mountains; and gathered from the Rocks about *Puteoli*. This

is the only Kind of this Sort that can with any Justice be called a native or natural *Sal Armoniack*. We have, beside these, a *Sal Armoniack* in Cakes like Sugar Loaves, brought to us from many Parts of the *East-Indies*, but as there is very little Difference between this and the *Egyptian* Kind, I forbore to name it as a fourth Sort.]

10. Of the Bull, &c.

Pomet. **T**HE Bull, Ox, and Sheep, are Animals so well known to all the World, that it would be useless to give a Description of them. There is sometimes found in the Gall Bladder of Oxen, a Stone of the Colour and Shape of the Yolk of an Egg, that is soft, and of divers Crusts like the Bezoar; for which Reason it is called the *Ox Bezoar*, or the Gall-Stone, which if good ought to be high-coloured and well-dried; for if they are purchased when taken fresh from the Animal, they waste considerably in drying. Sometimes this Stone is sold pretty dear, especially if it falls into the Hands of Persons who know it's Value. The greatest Use that is made of it is for painting in Miniature, as they use Gamboge. The same Virtues are ascribed to this as to *Bezoar*. But as this Stone is to be met with at home, it makes it not so much valued as *Oriental Bezoar*. We likewise sometimes meet with a Cartilage in the Heart of an Ox, like that of a Stag, to which they give the Name of the Bone in the Heart of the Ox, which is now and then used in Physick, instead of that in the Stag's Heart, tho' improperly.

By the burning of Beef Bones, there is a Black made, called *Bone Black*; it ought to be fine, brittle, shining, and well ground; its Use is for Painting. There is a Glue made of the Cartilages, &c. well boiled in Water, which is cast into Moulds, and afterwards spread out and dried. This is then called *Bulls Glue*, or strong Glue, of which they make a considerable Trade in *France*, especially of that made in *England* or *Flanders*.

The strong *English* Glue ought to be chose well boiled, dry, clear, and transparent, of a reddish brown, easy to break with the Fist, not gravelly or foul, but the smoothest and neatest that can be had; rejecting such as when melted stinks much; as all the strong Glues that are made at *Paris*, or thereabout, do, which are less valued for any Kind of Works, than that which is brought from *England*. The *Flanders* Glue ought to have the same Qualities with the former; but is not so much boiled; they use this Glue for Hat-

making, it serving them better than that of *England*, as well as to paint in Water Colours.

The *West-India* Company in *France* bring, especially to *Roüen*, a great Quantity of Ox Hides from *Barbary*, of which the Merchants of *Roüen* make a considerable Business, tho' at *Paris* they sell but few. The greatest Share comes from *Senegal*, with the Gum and Gold Dust. As the Merchants of *Roüen* are obliged to give Credit for three Years to the Tanners, if by Accident any Tanner come to fail or die, and that the Successor of him is not able to pay for his Goods, the Merchant is permitted to open his Tan-Pits, and withdraw his Merchandize. Besides these, we sell many other things had from the Bull, as Ox-Hides from *Hungary*. The best are the whitest, and the true *Hungarian*, because they are much better than those which are wrought in *France*. Likewise *English* Calf-Skins, and others without Hair, which come from several Parts, as also Flocks and Beasts Hair. And beside all these we trade in Beef-Suet, from *Ireland*, which ought to be new and white.

Bos, in *English* the Bull, Ox, or Cow, *Lemery*. are sluggish, horned Beasts, which chew the Cud, and cleave the Hoof; the Horns of the Bull are short, of the Ox very large. It is a Beast generally known, differing much in Shape, Size, Horns, and Colour, according to the Variety of Countries where brought forth. They yield from every Part a great deal of Oil and volatile Salt. The Flesh of the Bull is coarse and tough to that of the Ox. The Cow's Flesh, if fat, is good Meat; but if old and lean, it is not eatable. The young Bullock's Flesh is fine, but much inferior to the Ox's. Veal is a pleasant Meat, easy of Digestion, loosens the Body, and heals the Bowels in a Bloody-Flux.

The Blood drunk warm is said to cure the Epilepsy; besmeared upon the Skin warm, it takes away all Foulness; and is also good against the Gout and other Pains. The Fat is emollient, and is used in Balsams, Ointments, and Plaisters. It cures Pains proceeding from Colds; cures Kibes and Chilblains, and heals the chapping of the Hands, Lips, Nipples, Fundament, &c. The chymical Oil is good against the Gout, Palsies, Numbness, Contractions of the Nerves and Muscles, Lameness, &c. The Marrow is of the same Effects, but much finer. The Horns are alexipharmac, and by some called the *English Bezoar*; the Powder rasped from the Horn much exceeding the truest and best *Oriental Bezoar*. Moreover, it is of singular Use in the Falling-Sickness, Fits of the Mother, Convulsions, Palsies, Lethargies, &c. The Hoofs and the volatile Salt thereof
are

are Specificks for all the Diseases the Horns are said to be good against.

The Gall, mixed with the Marrow and Fat of a Hen, and dropt into the Ears, eases their Pain. That of a Bull is sharper and stronger than of an Ox or Cow; and mixed with Honey is a good Vulnerary, and cures almost all Diseases of the Eyes, if curable. There is no better Eye-salve than it is. By itself it is a good *Collyry* against Blood-shot, Clouds, Films, Haws, or Pearls in the Eyes. Mixt with *Myrrh* and *Aloes*, it cures Ulcers of the Penis and other Parts, as also the Piles. Mixt with Nitre, it removes Scurf and Leprosy. The Dung is temperate, discussive, anodyne, &c. The Urine drank, cures the worst Kind of Jaundice and Dropsy, by provoking to Urine; the volatile Salt and Spirit, are powerful Openers of Obstructions. They find sometimes in the Stomach of an Ox or Cow, a Sort of large Ball like a small Apple, of a round Figure, a little flattish, having usually towards the Middle a round Hole, wherein one may put one's little Finger; it is of a reddish grey Colour. This Ball is made of the Hairs which the Ox or Cow licks off herself, and which, in Process of Time, stick one upon another 'till they are collected into a Mass. It is reckoned proper to stop the Hemorrhoids and other Fluxes; the Dose being from half a Scruple to half a Drachm, powdered and taken inwardly. It is likewise used externally, like Sponge, to deterge and dry up Wounds.

There is another Kind of this Creature, called a *Bison*, which is but a wild Cow, Bull, or Ox, breeding in *Scythia*, *Muscovy*, and *Scotland*; but those in *Scotland* are white. It is called *Vacca Pæonica* in *Latin*; in *Greek*, *Bison*. They differ nothing from the common Cow or Ox, save that their Mane is like a Lion's; and they have a Beard under their Chin, being much larger than those which are common with us: Those in *Scotland* are of a lesser Kind, where they were once in vast Numbers, but are now mostly destroyed. Their Flesh, and all their other Parts, are equal in Goodness with the common Sort before treated of.

To the *Bison* we will add the *Urus*, called in *English*, the *Ure-Ox*, or *Cow*, but unknown to the *Greeks*. These also are a Kind of wild Oxen or Cows, differing little or nothing from our common Ox or Bull, save in their Magnitude or Stature, coming near to the Bigness of an Elephant; when grown up they are a wild untameable Creature, nor can they be made sociable like ours, unless they be taken when Calves, and brought up young. They breed in the Woods of *Hercynia*, in the *Pyrenean Mountains*, in *Prussia*,

&c. where they are said to be so wild, cruel, and untameable, that they neither fear or spare Man or Beast. Their Largeness and Strength is incredible. Their Goodness for Food, and Virtue of their Flesh, Milk, Hides, Horns, and other Parts, as also the Flesh of their Calves, differ nothing from our tame ones, nor is their Beef any ways inferior to ours; but is only of a larger Kind.

[There is hardly any Part of this Animal which has not at one Time or other been celebrated for its medicinal Virtues; but what are principally used now, are the Gall, which mixt with the Powder of *Colocynth*, and applyed as a Plaister to the Belly, is said to purge and destroy Worms; and the Oil of the Feet, which is an Ingredient in the Ointment of *Marsh-mallows*.]

II. Of the Ram, or Sheep.

SHEEP are one of the most necessary *Pomet.* Animals for the Use of Mankind, and therefore bred in most Nations of the World, though the Difference of Climate makes some Difference in their Colour and Shape. The Sheep of *Greece* are less than the Sheep of *Ægypt*, and the *Oves Pyrrhicæ* were like Oxen, by Reason of their exceeding Largeness, their Name being deriyed from *Pyrrhus* their Master. The Sheep of *Chios* are very small, and the Rams of *India* not much bigger than our Lambs. In *Spain* their best Sheep have black Fleeces, and all their Sheep bear exceeding fine Wool. Near the *Alps* they are grey, or Honey-coloured. In *Asia*, *Bætica*, and *Erythræa*, red like Foxes. At *Canusium* they are yellow, or Lion Tawny: And so also at *Tarentum*. In *Istria* and *Liburnia* the Sheep bear Wool so coarse, that it may rather be accounted Hair than Wool. The Sheep of *Apulia* gave the Name of *Lana Italica* to a Kind of excellent Wool; yet it was short and coarse, good for nothing but to make Garments to ride in, and to wear in rainy Weather. The *French* Sheep are not of the best Kind; but the *Flemish* have a fine, soft, curled Wool; so also have the Sheep of *Mileum*, *Attica*, and *Gadilonea*. Those in *Pontius* and *Cappadocia* coarser. In *Scotland* the Sheep bear good Wool; but that of the *English* Sheep excels, in Softness and Fineness, all other Wool in the World, except the *Spanish* Wool; and yet the *Spaniards* had the Sheep which bears that superfine Wool first from *England*. In *Æthiopia* the Sheep bear no Wool at all, but Hair like Camels Hair. In *Gortynis* the Sheep are red, and have four Horns. In some Parts of *India* both Sheep and Goats are as big as Asses, and bring often four Lambs at a Time, never less than three.

three. The *Arabian* Sheep are in Size, Figure, and Colour, like the *English* Sheep; but there are two Sorts amongst them that are distinguished by the Length and Breadth of their Tails, being so extravagant both Ways, that the Sheep cannot move from one Place to another without Assistance.

Besides the common Sort of Sheep, there are two Kinds of wild Sheep, the *Musmon* and the *Subus*. The *Musmon* is not unlike a common Sheep, except in its Wool, which seems to be rather the Hair of a Goat, being the same which the Antients called *Oves Umbricæ*, the *Umbrian* Sheep. Some will have this to be a Kind of wild Goat, which it does not so much resemble, for it wants the Goat's Beard, and its Horns are absolutely like Rams Horns. They are bred in *Corfica*, *Sardinia*, and *Spain*; and are said to be got between a Ram and a She-Goat, as the *Cinyrus* is between an He-Goat and a Ewe. The Form of the *Musmon* is much like a Ram; his Horns grow from his Head like a Ram's, and bend backwards almost to his Ears; it is exceeding swift of Foot, not much inferior to the swiftest Beast. The Skins of them are so thick, that in the Place where they are bred, they are used for Breast-Plates. These Sheep live on the Mountains, and are admirable Meat, but are scarcely found any where now but in *Sardinia*.

The *Subus* is a Kind of wild, or rather Water-Sheep, of an amphibious Nature, living both on the Land and in the Water; he eats Fish, but tarries no longer in the Water than 'till his Belly is full. This Sheep is of a bright yellow Colour, like those of *Crete*, but its Wool is not so rough. It has two large Horns upon its Forehead, swims well, and is very greedy after Blood. Thus much of the wild Kind, and such as are not common; we shall now return to those that are so.

The Sheep is the mildest and most inoffensive of all the Creatures upon Earth, of which there is no Part but what is profitable and useful to Mankind: The Flesh, Blood, and Milk are for Food; the Skin and Wool both together, and apart for Cloathing: The Bones for making of Tests or Coppels to melt Gold in; the Guts for Instruments of Musick and Bow-strings; the Horns and Hoofs for Trumpets, and other little Toys, besides their physical Use, and the Dung for manuring of Land. Their Flesh is the universal Food of *Europe*; and in some Countries they make Butter and Cheese of their Milk. As to their Wool, they are very profitable in all Nations, being shorn in the cold Countries once a Year; but in the hotter Countries twice a Year. In some Places they are never shorn; but accord-

ing to the old Custom, they pull the Wool from the Sheep's Back, whence the Name *Vellus*, a Fleece, is supposed to come à *Vellendo*, from pulling.

Having thus far given a Description of this Animal, I shall now proceed to shew its medicinal Uses. From the Horns is drawn a volatile Oil, Spirit, and Salt; which are efficacious against Diseases of the Head, Brain, and Nerves; as Epilepsies, hysterical Fits, Vapours, &c. From the Hoofs and Urine you may extract the same Preparations. The Dung is a prevalent Medicine against the Jaundice, Dropsy, Cholick, Pleurisy, Spleen, Stone, Gravel, Scurvy, &c. taken either in Powder, Tincture, or Decoction. The Dung made into a Cataplasm with Camphire, Sal Armoniack, and a little Wine, opens, digests, attenuates, and eases Pain. It is excellent in Abscesses about the Ears and other Emunctories, Swellings in Womens Breasts, Pain of the Spleen and Gout.

The Skin, besides its Uses for Leather, Parchment, Size, &c. has some medicinal Uses of considerable Moment. A Lambskin, newly taken off and applied hot, is an admirable Thing to give Ease in Pain, strengthen any weak Part, and cure a Bruise when newly received, as is also a strong Decoction made of it in Claret, bathing in it as hot as can be endured, it will assuage Tumours, strengthen weak Joints and Limbs, and restore a Wasting of the Parts, from an Atrophy or Consumption; and some say it is powerful enough to remove a *Diabetes*.

The Tallow and Cawl serve for making Balsams, Ointments, and Emplasters; and the Marrow is good against the Cholick, Gripings of the Guts, and Exulcerations of the same. The *Oesiphus* is the Sweat of the Sheep condensed upon the Wool, and making it greasy. The People who wash the Wool save it, and put it up in Barrels to send to different Places; most of what we sell is brought from *Berry* and *Beauce* in *Normandy*, but the Demand for it is now grown very small. It ought to be chosen new, of a middling Consistence, for the longer it is kept the more it hardens, and will in Time come to the Consistence of hard Soap; the Smell also ought to be tolerable, for there is some so stinking, that there is no coming near it. It ought to be of a greyish, or Mouse Colour, and as clean as may be. In long keeping it acquires a perfumed Smell, as I have experienced. It is emollient, discutient, and anodyne, being useful against Contusions, Strains, and Weakness of the Joints and Limbs. We also trade in Mutton Suet, especially that of *Holland*, which ought to be of a clear white. The Guts being cleansed, dried, and twisted, serve for Strings to Bows and Instruments of Musick. A Jelly

Jelly made of Sheeps Feet, is prevalent in Consumptions, Fluxes of the Bowels, Exulcerations, and the like.

There is great a Trade carried on throughout the World with Wool; and, amongst the rest, *Persian* Wool is in great Vogue. The best of which is the softest, and least full of long Hairs; but *Spanish* Wool is reckoned the finest and most saleable Commodity; of which there are these several Sorts: *Vigognia* and *Segovia* Wool the finest Sort, the small *Segovia* and *Segewen Segovia* of *Castile*, &c. The ordinary Sort of *Navarre* and *Aragon*; the finest white Wool of *Sevil*, *Malaga*, and *Portugal*. Besides these, there are the *German* Wools of *Rostock*, *Stralsund*, and *Anclam*, *Newmark*, *Weydacker*, *Stetin*, *Thoorn*, *Dantzick*, *Prussia*, *Lunenburg*, and *Bremen*. The Wool that is produced in *Berry*, and the adjacent Parts of *France*, is the longest, and generally the coarsest in *Europe*.

[Almost every Part of the Sheep have, like those of the Bull, been celebrated for some medicinal Virtue; but the present Practice takes very little Notice of any of them, except of the Suet as in an Ingredient in Ointments and Plaisters.

The *Æsopus* is now hardly any where to be met with, though it has always held the Credit of a useful external Remedy, as indeed all Animal Fats may, with very good Reason, be supposed more subtile and penetrating, from the Share of volatile Salt they contain, than those expressed from vegetable Substances.]

12. Of the Hart, or Deer.

Pomet. **T**HE *Deer* is an Animal so well known every where, that it would be needless to give a Description of it. I shall only inform you that there are three Kinds understood by this general Word *Deer*, viz. *First*, The Hart and Hind, which are called in *England* the *Red Deer*; *Secondly*, The *Fallow-Deer*; and *Thirdly*, The *Roe-Buck* and *Doe*. All which are Animals of very long Lives, as may be seen by a Stag's Horn kept at the Castle of *Amboise*, of a prodigious Length, which testifies the extreme Age of the Creature that bore it. Some *French* Historians relate, that *Charles* the Sixth killed a *Deer* in the Forest of *Senlis*, which had a Golden Collar about his Neck, wherein were engraved these Words, *Hic Cæsar me donavit, Cæsar gave me this*. This answers to a Story that passes in *England*, where it is reported, that King *James* the First, in hunting, took a *Hart* with a Collar, having an Inscription with *Julius Cæsar's* Name thereon. But as to the Longevity of the Creatures, antient

Authors have been abundantly more profuse in their Allowances than the Moderns; for it is affirmed by some of the former, as a positive Truth, that *Agathocles*, King of *Sicily*, hunting in *Calabria*, took a *Hart* with a Collar upon him, on which was written *Diomedes Dianæ*, which was supposed to be done before the Siege of *Troy*, which was a thousand Years before his Time.

The red and fallow *Deer* are generally found in all Countries of *Europe*, and several Parts of *Asia*, *Africa*, and *America*, in Parks, Woods, or Forests, feeding upon Grass, Hay, Herbs, and Leaves of Shrubs and Trees. The *Roebuck* is bred chiefly in *America*, *Syria*, *Arabia*, *Greece*, and several Parts of *Africa*, in *Lycia*, *Italy*, *Spain*, the *Alps*, and *Germany*. It is observable, that the *Lycian Roes* never go over the *Syrian* Mountains; yet their Delight is wholly among Hills and Rocks.

As to the medicinal Uses of the Parts of these Animals, they are in the main one and the same; and therefore in treating of them, we shall do it generally for all at once. The Horns are the principal Parts in Use, whereof there are many Remedies prepared; as the Raspings, the calcined Powder, the Jelly of Harts-Horn, the Oil, Spirit, and volatile Salt; and the Stag's Head Water, which is an excellent Medicine to facilitate Delivery, resist Poison, and cure malignant Fevers. The Dose is from one Ounce to four, but those who want it should take care to buy it of honest People, it being very scarce. The Oil, Spirit, and Salt are great Cordials, and good against fainting and swooning Fits, Heart-burnings, Convulsions, Falling-sickness, hysterical Fits, and provokes Sweat; the calcined Powder stops Fluxes. The Hoofs have the same Virtues with the Horns, but are much more powerful Cephalicks; the Spirit, or volatile Salt, or Oil, being excellent in Epilepsies, and Fits of the Mother. The Bone, or rather Cartilage, that is found in the Heart of an old Deer, is said to be cordial, and is brought into the Confection of *Hyacinth*. It revives the Spirits, expels Melancholy, and helps the Palpitation of the Heart. This Bone is supposed to be the Effect of a *Polypus*.

The Bones of this Creature, distilled in a Retort, yield a volatile Spirit, Salt, and Oil, but neither so fine, or so much in Quantity as arise from the Horn. The Fat or Suet is equal to the best Emollient. It lenifies and softens Callosities, Contractions, schirrous and cancerous Substances. The Marrow being purified, and prepared for keeping, has the same Virtues, and may be used the same Way. The Powder or Filing of the Penis, given in Wine, is diuretick, and good against the Colick and Dysentery:

J.

Some.

Some have affirmed it provokes to Venerſy. The Skin or Hide of the Haſt, Hart, Hind, Buck, or Doe, are of great Uſe, when dreſſed, for Garments, Gloves, Stockings, Bags, Shoes, Boots, and other Things; and the Stones that are ſometimes met with in the Stomach, or Gall-bladder, are ſomething like *Bezoar*, both in Figure and Virtue, but not altogether ſo powerful, and nothing near ſo much valued.

Cervus, or the *Deer*, is a large four-footed Animal, that is very lively, ſprightly, and agile, living a long Time, and bearing a great Branch of Horns, that ſerve him for his Defence, and drop off in the Spring-time, inſtead of which new ones put forth. The Female Hind or Doe, is called *Cerva* in *Latin*; the young one *Hinnulus*, or the Fawn. The whole abounds with abundance of volatile Salt and Oil. The Velvet Horns are ſo ſoft, during the firſt Month, that they may eaſily be beat off; and being made into a Jelly, are uſed to haſten the Birth. The Raſpings of Harts-Horn are proper for Ptiſans, Jelly, &c. The Bone found in the Heart of a Stag, is ſometimes half as long as the little Finger, broad as the Nail, flat and thin, uſually triangular and white. Chufe the leaſt rather than the biggeſt, becauſe the Bone in an Ox's Heart is often impoſed upon you for that. It is almoſt cartilaginous when taken out of the Animal, but hardens into a bony Subſtance afterwards. The Bone in the *Deer's* Heel is proper in the bloody Flux, being given in Powder to a Drachm. The Marrow is yellowiſh, inclining to white, and may be uſed externally in *Rheumatifms Sciatica's*, &c. The Suet is likewise profitable for the ſame Ends, being emollient, ſtrengthening to the Nerves, and reſolutive.

[The Virtues of Harts-Horn are too well known to need any Thing to be ſaid of them here. The *Os de Corde Cervi* is a Congeries of Arteries at the Baſis of the Stags Heart oſſified, as we ſometimes find the crural and other Arteries in human Bodies. Its Virtues ſeem to be altogether imaginary, and it is ſeldom to be met with genuine, if it were of any real Value; the ſame oſſified Subſtance from the Hearts of Oxen being often ſold in its Place, and oftener than that the *Oſſa Hyoidea* of various Animals.]

13. Of the Goat.

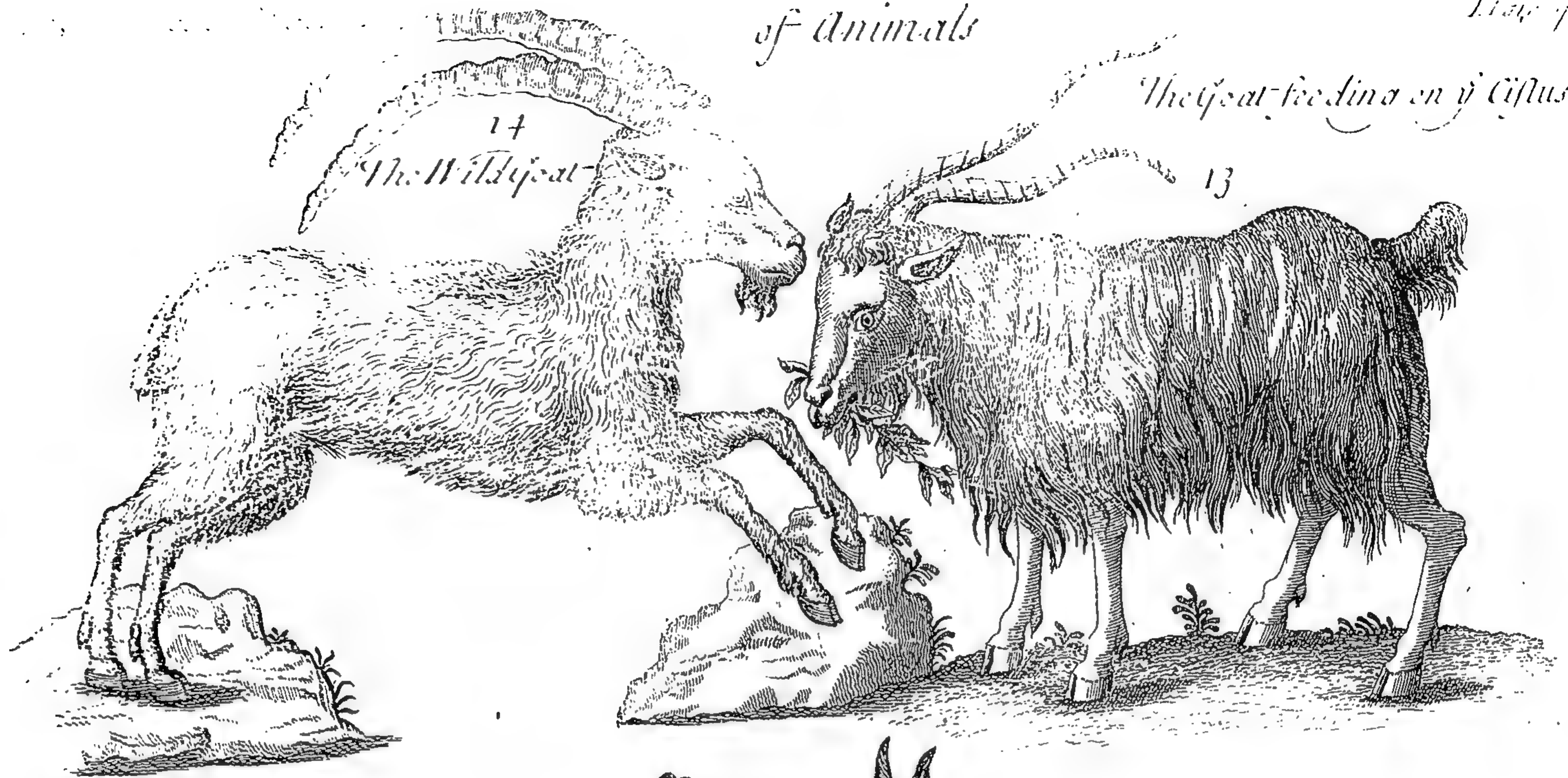
Pomet. THE Goat is an Animal univerſally known in *France*, *Italy*, *Cyprus*, *Candia*, and other Parts. The chief Commodity we ſell which comes from theſe Animals, is a Kind of Fat or Greafe which is ſound ſlick-

ing to the Beards of the Animals, eſpecially ſuch of them as feed upon the Leaves of a certain Shrub, very common in the hot Countries, which the *Botaniſts* call *Ciſtus Ledum*. The Leaves are long and narrow, rough, very gluey, of a dark Green, and continue all the Year.

The Inhabitants of the Country gather this Greafe with wooden Inſtruments, like Combs, and then make it up, being commonly full of Hair and other Filth, into a Maſs, or Cakes of different Size and Weight, which is what is called natural *Labdanum*, or *Ladanum*, or *Labdanum* in the Beard; but ſince the Iſlanders underſtood that there was a ſweet pleaſant Smell in this greaſy Matter, and that when it was well purified, it would be conſiderably valued, they have taken care to melt it, and ſtrain it through Cloths, as well to take out the Droſs, as to give it a more fragrant Smell. Having thus refined it, they wrap it up in fine thin Bladders, as we have it brought us, and to which we give the Name of *Liquid Labdanum*, or *Black Baſam*. This Fat, thus prepared, is much uſed in *England*: As for what is uſed in *France* it is ſcarce worth ſpeaking of; the Preſumers being the only People that deal in it, either becauſe of its Dearneſs, or becauſe it is but little known. The remaining Maſs, from which they have expreſſed the *Liquid Labdanum*, they make into Rolls, in the Shape of the Rolls of Wax-candle, and this they call *Twisted Labdanum*.

Chufe the *bearded Labdanum*, the moſt fragrant and cleaneſt you can get. The liquid Kind ought to be of a thick Conſiſtence, of a fine Jet Black, ſweet and pleaſant, of a Smell, inclining to that of *Ambergreafe*, which has given occaſion to ſome Merchants to ſell *Liquid Labdanum* for black *Ambergreafe*. As to the twisted Sort, it ought to be rejected, as being full of nothing but Dirt and Sand, as may be known by its Weight, and by the Quantity of ſhining Particles it is full of; notwithſtanding its being the worſt, it is however much uſed, as it is cheaper than the beſt, and eaſy to Powder. Beſides theſe different Sorts of *Labdanum*, we have prepared Goat's Blood, which is uſed in Medicine; and that it may be endowed with the excellent Qualities, which the Antients attributed to it, the Beaſt muſt be fed for ſome Time with aromatical Herbs, and ſuch as are proper to break the Stone, and muſt not be above four or five Years old. Having cut its Throat, you are to reſerve only the middle or ſecond Blood, rejecting what comes out firſt and laſt. This middle Blood you are to put into an earthen Veſſel, covered with a clean Cloth, to hinder Duſt or Dirt from falling into it, and then expoſe it to the Sun, or ſet it in the Shade to dry; and when it

The Goat feeding on y Cistus.



15
The Shammy or Rock Goat



16
The Shaoreen.



it is well dried, it ought to be put into a Glass Phial to keep it for Use. They usually prepare the Blood of a Goat in the Month of *July*, when the Creature has had Time to feed on aromatick Herbs. It is sudorifick, aperitive, and resolvent; good in Pleurifies, Stoppages of Urine, and the Stone. The Dose is from a Scruple to two Drachms. *Van Helmont* affirms, that if you hang the Goat by the Horns; and bending the hind Feet to the Sides of his Head, in this Posture cause his Testicles to be cut out, and dry the Blood that runs from the Wound, it will become as hard as Glass, and difficult to be beat into Powder, and quite different from that taken from the Throat. He also asserts, that one Drachm of this taken will infallibly ease and cure the Pleurify without Blood-letting.

We bring from *Auvergne* near *Lyons*, and *Nevers*, a great deal of Goats Suet; it being not only of some Use in Physick, especially that of the He-Goat, but also used to many different Purposes. It ought to be dry, of a clear white within and without; and take care it be not mixed with Mutton Suet, which is not easy to distinguish; therefore do not buy it of Merchants you cannot trust. As to the Skin, it is of great Use; as, to carry Wine, Oil, Turpentine, and many Liquors in. The *Eastern* People use the Skins of these Creatures to cross a River with, and in the Rafts or Floats of Timber on which they carry their Goods upon the Rivers in the *East-Indies*.

Besides these Uses, the People of the *Levant* dress Goats Skins, and Sheep Skins, and dye them of a red Colour, by the help of Stic-Lac, and other Drugs, and then they become what we call *Turkey Leather*, which we have a considerable Trade in, because of the great Use made of it in *France* upon several Occasions. The true *Turkey Leather* should be of a beautiful Scarlet Colour, and a fine Grain. We make this Kind of Leather at *Marseilles* and *Paris*; but it is not of so good a Colour, and will not last so long. As to the black Leather, the best comes from *Barbary*, in that it is of a finer Black, and better Grain. They make this also at *Rosien*; but it is neither so good nor so beautiful, as those made in *Barbary*.

The Goats Skins, that have brought over the *Provence* Oils, are bought up by People, who dress and make a kind of Chamoy Leather of them, which serves for many Uses.

14. Of the Wild Goat.

Pomet. THE wild Goat is an Animal little known in *France*, but very common in *Switzerland*; upon which Account I thought it

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would not be amiss to relate what *Bellonius* has written of it, of which this is the Substance:
 “ Wolves will not live in the Isle of *Crete*; for
 “ which Reason they leave all their Cattle in the
 “ open Pastures without Fear, and especially their
 “ Sheep and Lambs: When the Inhabitants of
 “ the Country take the Kids of the wild Goats, of
 “ which there are great Plenty, they bring them
 “ up with the domestick Goats, and so they be-
 “ come the Property of those who tame them;
 “ but the wild ones are theirs who can take or
 “ kill them. They do not exceed the common
 “ Goat in Bulk, but they have no less Flesh upon
 “ them than a large Deer, and they are covered
 “ with the same Sort of Hair, short and thick,
 “ not like the Goats. The Males have a large
 “ brown Beard, which no other stag-haired Crea-
 “ ture has; they become grey with Age, and have
 “ a black List down their Backs. We have
 “ them on our Mountains, and especially on Pre-
 “ cipices that are difficult of Access; one would
 “ wonder to see such a little Animal carry such
 “ a Weight of Horns on his Head; for they are
 “ sometimes four Cubits long. There are two
 “ Sorts of these Goats, as I have made appear
 “ from the different Horns brought from *Cyprus*
 “ and *Crete*, which I presented to M. *Le Bailly*.
 “ There are some Peasants on the Tops of the
 “ highest Mountains of *Crete*, that are such
 “ Archers, especially about the Mountains of
 “ *Sphachia* and *Madara*, that they can wound
 “ them with their Arrows five and twenty Paces
 “ distant: And in order to come at them, they
 “ take the She-Goats which they have tamed,
 “ and brought up from young ones, and tie them
 “ in some Passage of the Mountains where the
 “ He-Goats use to go, and lie in wait on the con-
 “ trary Side to the Wind, for fear the wild Goat,
 “ who is so exquisite of Smell as to scent you a
 “ hundred Paces, should discover them. The
 “ Male finding the She-Goat on the Way, stops,
 “ and then the Peasant draws his Bow; and if by
 “ chance he wounds him but slightly, though the
 “ Arrow sticks in his Body, he knows how to
 “ cure himself; for he runs to the *Dittany*, which
 “ is an Herb that grows upon the Rocks in *Crete*,
 “ and brouses upon it, by which Means he heals
 “ himself.” The *Switzers* hunt these Animals
 both for eating and for their Blood, which they
 prepare as aforesaid, and use for dissolving the
 Stone, forasmuch as it has greater Virtue than
 the Blood of the common Goat; especially
 when they feed on Saxifrage, or other Herbs of
 like Qualities. It is also esteemed good in Pleurifies;
 the Dose is one Drachm. As to the Choice of it,
 take care that it is genuine, and that is sufficient.

Capra vel Capra, Hircus vel Hirca, the *Lemery*. He or She-Goat, are both the tame and the wild, one or other of which are Inhabitants of most Parts of the World; besides which there are the *Rock Goat*, and the *Oryx*, or the *African wild Goat*. But I shall confine myself here to the wild and tame *Goat*, that feed upon barren Mountains, and waste Places, and eat almost all Sorts of green Things whatsoever; so that they live and grow fat upon what any other living Creature would be starved with. Their Increase is prodigious; for they sometimes bring forth four, and sometimes five at a Time; and the Ewe Kinds will have young ones before they are a Year old. The Profit of keeping *Goats*, which is only proper for barren and hilly Countries, besides the Advantage of keeping the Family, arises from their Hides and Tallow; their Hides being the same Skins which in *Turkey* they make *Turkey Leather* of; and in *Spain*, *Spanish Leather*, and *Cordivant*, so called from *Corduba*. These Skins are so valuable, that in some Countries they go in Tale for Money, as the *Cocoa Nuts* do in others.

Of what Use the Leather is, daily Observation proves to us. Of the best tanned Leather, which is the *Turkey* and *Spanish*, are made Covers for Chairs, also Shoes and Boots for the Gentry and better Sort of People; of *Cordivant* and Kid Skins are made vast Numbers of Gloves of all Sorts; of the Vellum may be made Covers for Books, Drum-Heads, Deeds, Maps, Books, and other Writings. Theirs is the best Sort of Leather for universal Use, both for Strength, Substance, and Goodness, next to Neats Leather. The Horns and Hoofs of these Creatures abound with a great deal of volatile Salt, Oil, and Spirit, which are equally useful with the Preparations from *Harts-horn*. The Powder of the dried Testicles is boasted by some to be no ways inferior to *Castor*; and being given to a Drachm, cures Fits of the Mother to a Miracle. A volatile Oil drawn from the Brain of the *Goat*, and well rectified, is compared with *Goddard's Drops*, that made such a Noise in the Reign of King *Charles* the Second, and may very likely answer as well, since that Medicine was no more than an exalted volatile Oil, as this is, and so may be ranked in the same Class.

[The Parts of the *Goat* said to be useful in Medicine, are the Blood, Marrow, Suet, Milk, Dung, Urine, Bladder, Caul, Skin, and Gall, to which we may add the Stones generated in the Stomach; but scarce any of these are now ever prescribed or kept in the Shops.

The wild *Goat* is the *Ibex*, *Aldrov. De Quad. Bisul. 730.* *Gesn. De Quad. 303.* *Hircus ferus*,

Bellon. Obs. Ed. Clus. 20. It is found on the *Alps* and other high Mountains. The Blood of this Creature is esteemed an excellent Medicine in the Stone and Gravel.

Labdanum is a Gum Resin that flows from the *Cistus Ladanifera Cretica vera. Park. Theat. 666.* *Cistus Ladanifera Cretica flore purpureo. Tour. 19.* *Cistus a qua Labdanum in Creta colligitur. Bellon. Obs. Lib. i. Cap. 7.* In the Time of *Dioscorides*, it was gathered from the Hair of the Goats which fed among the *Cistus's*; but at present it is gathered from the Shrubs themselves, with a kind of Rakes, with many Thongs of raw Leather, which they gently draw over the Shrubs, and afterwards scrape the *Labdanum* from them with proper Instruments. It is very fragrant, and an admirable Balsamick and Astringent.]

15. Of the Shamoy, or Rock Goat.

UPON our Mountains, and especially on the *Pyrenees*, we meet with a kind of wild *Goat*, called the *Shamoy*, or *Rock Goat*. There is a great Trade carried on with these Skins, by which they convey Oil, Wine, and other Liquids out of the mountainous Countries, and of which they make several other Uses; for these *Shamoy* Skins, being dressed, are made into Gloves, Stockings, Drawers, Breeches, Waistcoats, Caps, &c. because they may be washed as Linen is, and be dyed into what curious Colour you please, as Orange, Lemon, Buff, Black, Green, Red, Blue, or the like.

This *Shamoy* is a very wild Animal, that is not to be met with, but on the very Heights of the Rocks and Mountains; for which Reason the *Latins* call him *Rupicapra*, or the *Rock Goat*, and he mostly feeds upon the Herb we call *Leopard's Bane*. Sometimes we find in the Stomach of these Animals a Stone of different Colours and Sizes, which is called *German Bezoar*, because the *Germans* esteem this not inferior in Virtue to the *Oriental Bezoar*.

The *Shamoy* is of the Size of the common *Goat*: His Horns are small, black, bent forwards, and very sharp; the Tail not above three Inches long. They have large Eyes, and never step but on the Tips of their Toes. They are coated like a Faun, and have a Streak running all along the Back.

Rupicapra, or the *Rock Goat*, is a wild *Goat*, no bigger than the common *Lemery*. Kind, which frequents the Rocks and high Hills; as the *Alps*, *Pyrenees*, &c. The Horns of this Animal are oddly turned, for they rise upright first, and then wind forward like a Hook. They

They feed upon the Plants that grow on the Sands and Tops of the Rocks; the chief of which is the *Doronicum Romanum*. The Male is called in *Latin*, *Dama*, being a very shy and timorous Creature. Both the He and She afford abundance of volatile Salt and Oil. The Liver is proper to stop Fluxes of the Belly; their Blood allays Vertigo's. The Fat is excellent for Ulcers of the Lungs and Phthificks, being taken in Milk. The Gall dries up, and wastes away Films and Cataracts in the Eyes.

[The *Chamois* or *Gemp* is the *Dorcas sive Rupicapra*, *Aldrov. De Quad. Biful.* 725. *Rupicapra*, *Bellm. Obs. Ed. Clus.* 57. *Jons. De Quad.* 52. The Blood, Liver, Gall, and Dung of this Animal have all their several Virtues ascribed to them, but are none of them ever now used in Medicine. The *Ægragropila*, or *German Bezoar*, found in the Stomach of this Creature, I have already mentioned in the Chapter of *Bezoar*. It is of various Sizes, and sometimes as big as a Walnut. It is said to have very great Virtues, but is seldom seen among us.]

16. Of the Shagreen.

Pomet. **C**HAGRIN in the *French*, or what is called *Shagreen* in *English*, is the Skin of an Animal very common in *Turkey* and *Poland*, which the *Turks* and *Poles* make use of to carry their Baggage, as in other Parts they do Mules, Horses, &c. When this Animal is dead, they take the hinder Part of his Skin, and hang it in the Air, after having strewed it, when raw, with Mustard-seed. They leave the Skins thus exposed to the Weather several Days, then take them in, and tan them, and when they are dressed, export them. This Skin is very hard when dry, and soft when steeped in Water. I have been assured, that that which makes this Skin so hard, is because this Animal sits down and rests upon his Buttocks. They bring two sorts of *Shagreen* from *Turkey*; to wit, the grey, or ash-coloured, which is the best, and the white *Shagreen*, which is dirty, and not nearly so good.

Chuse your *Shagreen Skins* of right *Turkey*, or *Constantinople*, as being much better than those of *Algiers* and *Tripoli*. There come some likewise from *Poland*, which you ought not to meddle with, because they are too dry, and will not take in the Alum when they come to be dyed. Likewise chuse the largest, fairest, and evenest Skins, with a little round Grain well formed, with as few Places altogether smooth as possible; those of a large and uneven Grain being less saleable, though no less fit for Use. The Use of this *Shagreen* is

very universal for all Sorts of Pocket Utensils, Watch-cases, travelling Furniture, and the like. They may dye these Skins of what Colour they please; but the most common are black, green, and red. The most beautiful and dearest is the red Colour, because of the Vermilion and Carmine with which it is dyed. You may know the true *Shagreen* from the *Spanish* Leather made into *Shagreen*, because the last is neither so rough nor so hard; but will wear smooth, which the true will not.

[The *Chagrin*, or *Shagreen* Leather, is the Skin of the Buttocks of the *Onager*. *Raii Synop. Anim.* 63. *Aldrov.* 332. *Jons. De Quad.* 14. *Onager*, *sive Asinus sylvestris*. *Gesn. De Quad.* 21. It differs but very little from the common Ass. No Part of it has been ever used in Medicine.]

Of Bears Grease.

Besides the several Parts of Quadrupeds already described, we sell *Bears Grease* and *Suet*, which are brought from the Mountains of *Switzerland*, *Savoy*, and *Canada*. The Grease, if it be good, ought to be fresh, or new melted, greyish, gluey, and of a strong ill Smell, of a middle Consistence, that is to say, betwixt hard and soft; and meddle not with that which is white and hard, being mixed with Suet. This Fat, or Grease, is a sovereign Remedy for curing cold rheumatick Humours. It is also much valued for easing Pains of the Gout, by rubbing the afflicted Part, and to make the Hair grow; it being esteemed admirable against Baldness, especially when incorporated with Bees in Powder and Nut-Oil. As for the Bears Suet, there is but very little of it brought into *France*, it being little used, and that only by those who will not come up to the Price of the Grease. The Bears Gall is good in Epilepsies and Asthmas, taken from two to eight Drops. It is also used externally to cleanse old Ulcers.

We sell likewise the Grease of the *Badger*, as very sovereign in nephritick Cases, and Sciatica Pains. And we have also Pencils made of the Badger's Hair for the Painter's Use. This Creature is about as big as a Fox, but shorter and thicker; the Skin is hard, rough, and has rugged harsh Hair upon it, of an intermingled grizzled Colour, sometimes whiter, sometimes blacker; the Back almost black, the Belly almost white; the Teeth are very sharp, the Tail short and hairy, of different Colours; it is long-snouted, has short Legs before, yet shorter behind, little Ears, small Eyes, sharp Claws, and is a Beast commonly very fat, and of a strong stinking Smell; the whole

Length of him, from the Snout to the Tip of the Tail, is not above two Feet and a half.

The Liver and Bowels of the *Wolf* dried, are recommended for the Cure of all Diseases arising from the Liver and Bowels, particularly the Cholick; and the Heart of the same Creature is esteemed good in Epilepsies. We also sell the Grease and dried Lungs of the *Fox*. The last esteemed excellent against Coughs, Asthma's, Phthificks, Wheefings, Hoarseness, Shortness of Breathing, and all other Diseases of the Lungs. The Grease is admirable for the Ear-ach, and to rub the Limbs of such Persons as are subject to Convulsions, Palsies, Tremblings, and Weakness in any Part.

Of the Musk Rat.

There are also the Testicles of a little Creature brought us, called, in the *American Islands*, *Piloris*, or *Musk Rat*, because of its Resemblance to our common Rats, except that the *West-Indian* are much larger. They sell these for *Musk*, to People that do not understand them; but it is an easy Matter to find it out, since these are no longer or thicker than a Child's little Finger. The *Musk Rats*, according to Father *Du Tertre*, have the same Shape with ours, but are so much bigger, that one will out-weigh four of ours: The Hair upon the Belly is white, and that on the Back black; they smell so strong of Musk, that they perfume all the Air about them as they go. The Inhabitants of *Martinico* eat them; but they are forced, after they have skinned them, to leave them one Night in the Air, and then throw away the first Water they are boiled in, to take off the too strong Scent of the Musk. These Rats are natural to the Island, and they had none of the common Kind, 'till of late that they were brought thither by the Ships that trade there.

[The *Bears* Grease is now seldom used, or found genuine among our Druggists, the others scarce at all; and the Testicles of the *Musk Rat*, the *Piloris*, *Lem. Diction. des Drog.* 424. are of no other Use than to adulterate the true Musk with.]

17. Of the Ostrich.

Pomet. THE *Ostrich* is a Bird that has short Wings, and is much valued for its Feathers; which serve as Ornaments for Hats, Caps, Beds, and Canopies of State. The *Ostriches* are taken in *Africa*, and are very common in *Peru*, where they march in Flocks like Cattle: The Natives eat their Flesh, and their Eggs are

good, though hard of Digestion: This is the largest of all Birds, being seven Feet high, and sometimes more. His Head is small, depressed, or flat-crowned, and almost like a Goose's; the Bill is compressed and small, of a triangular Figure, Horn coloured, with a black Tip; it has great Eyes, with a Hazel-coloured *Iris*; the Head and Neck, almost as far as the Breast, are bare of Feathers, as also the Thighs; the Head and Neck are covered with a certain Down, or thin set Hairs: The Sides under the Wings and Thighs are absolutely bare; the Wings are small, and altogether useless for Flying, designed only to assist the Bird in Running. The Feathers of the Back, in the Cock, are Coal black; in the Hen only dusky, and so soft that they resemble a kind of Wool; the Wing-Feathers beneath, are of the same Colour with those in the Back; but above, in their upper Part, they are purely white: The Tail is thick, bushy, and round, not as in other Birds, spread out in Breadth; the Feathers in the Cock being whitish, in the Hen dusky. Its Neck and Legs are very long; it wants the back Toes, and has but two others; the one Toe is five Inches and a half, and the other eight Inches long, covered with great disjointed annular Scales. It lays very large Eggs, of four or five Inches Diameter, one of which has Meat enough in it to serve seven or eight People, contained in a hard strong Shell, which they cover in the Sands, and forsake, never taking any more Care of them, but leave them to be hatched by the Heat of the Sun.

They have dissected several *Ostriches* in the Academy of Sciences; the largest whereof was seven Feet and an half high from the Ground to the Top of his Head. The Eye is oval like a Man's, having large Eye-brows; and the upper Eye-lid is moveable, contrary to the Generality of Birds, with an Eye-lid within, as a great many Brutes have; the Bill is short and pointed; the Tongue is small and adhering, as that of Fishes; the Thighs large, fleshy, and without Feathers, covered with a white Skin, a little reddish: The Legs are covered with great Scales; the Feet cleft, having only two Toes, with large Claws. The *Ostrich* carries the Quill exactly in the Middle of the Feather, upon which Account the *Aegyptians* represented *Justice* by it. When they came to examine the Inside of this Creature, they met with five Diaphragms or Partitions, which divide the Trunk into five Parts; four of which were placed strait up and down; and a fifth situated across, or thwart the Ventricles, which were found full of Herbs, Hay, Barley, Beans, Bones, and Stones, of which there were some of the Bigness



Ostrich

17

18

The Eagle . .

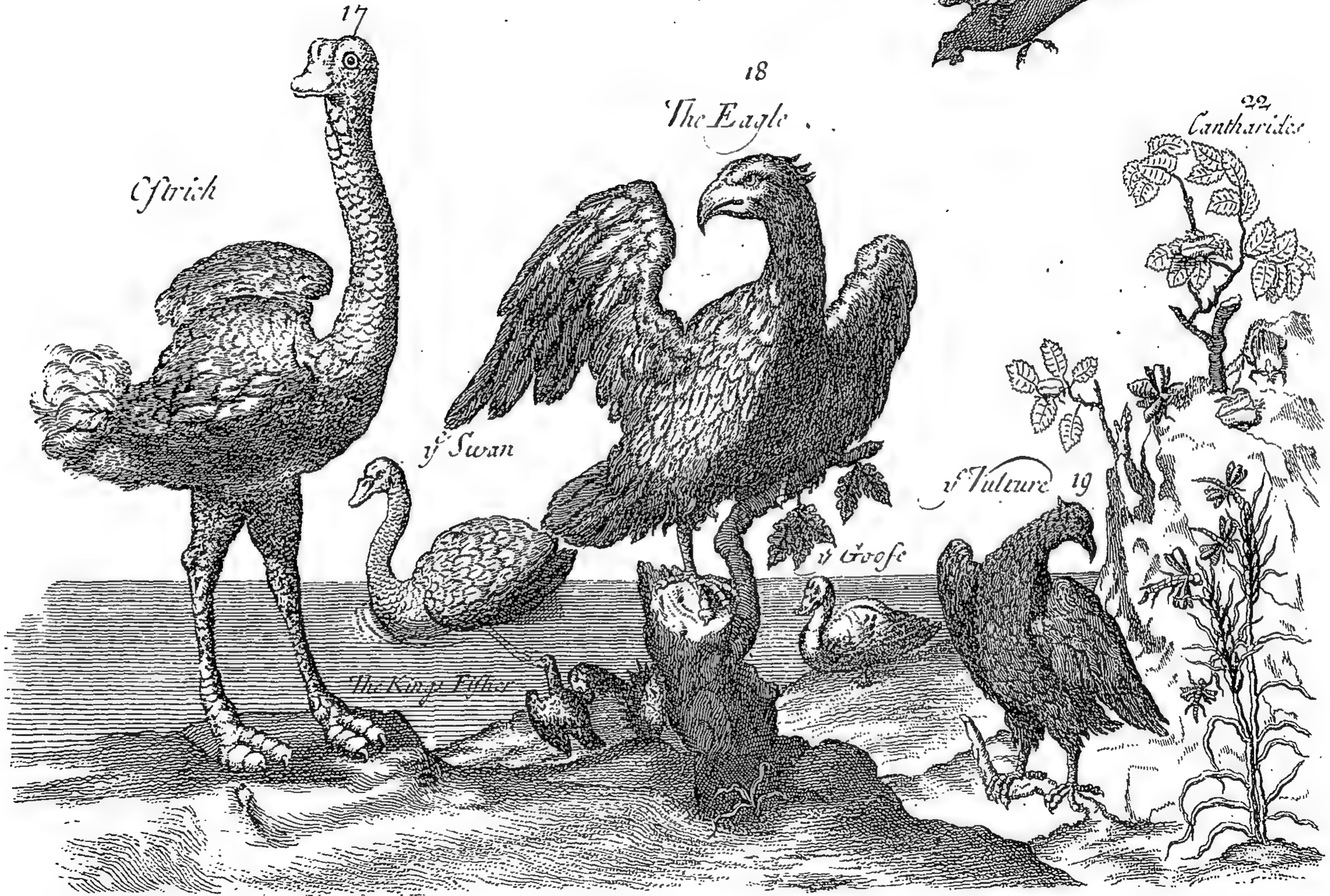
of Swan

of Vulture 19

of Goose

22
Cantharides

The King's Fisher



ness of a Hen's Egg. They found in one seventy Pieces of Money; the most Part of which was wasted and gone, and that apparently by their mutual Attrition one against the other, rather than by Corrosion. It is observable, that the *Ostriches* swallow Iron for the same End that Birds do Pebbles and Gravel, to help them to grind their Food, and not nourish them, or to digest it, as the Antients believed, for they perish if they swallow too much of it.

The Flesh of the *Ostrich* is fat, and said to cause an Appetite, and restore in Consumptions. The Ventricle, or Skin of the Stomach, strengthens and assists Digestion. The Fat is hotter than Goose Grease, and may be used with great Advantage to dissolve hard Swellings, relax contracted Nerves, and ease Pain. Besides the *African Ostrich*, already described, there are three other Sorts, to wit, the *American*, the *Emeu* or *Cassowary*, and the *Dode*.

The *American Ostriches* are somewhat less than the former. Their Legs are long, and they have three Toes on each Foot, one of which stands backwards. The Head is like that of a Goose, the Neck twenty-four Inches long, which they carry bended like a Swan or Stork; the Bill is compressed, or flat, but not very broad, two Inches and a half long; the Wings small, and not fit for flying, which they only assist themselves with in Running, which they do with that Speed, that a Grey-hound can scarcely overtake them. The whole Body is covered with grey Feathers, which are longer and more beautiful on the Back. The Tail is like that of the former, but stretched long-ways. It feeds on Fruit and Flesh, but will swallow any thing you offer it. The Flesh is reckoned among the *Spaniards* as good Food.

The *Emeu*, or *Cassowary Ostrich*, has a horny Crown on the Top of its Head, near three Inches high, of a dusky yellow Colour, which is reported to fall off at moulting Time, and to grow again with the new Feathers. The Head and Neck are bare, or only covered with a hairy Down; the Skin being of a purplish blue Colour. In the fore Part of the Neck hang down two membranous Wattles, or Lobes of Flesh, two Inches long, of a Vermilion Red; as is also the lower Part of the back Side of the Neck: Its Bill is of a moderate Thickness, and straight, and four or five Inches in Length; the Neck is about thirteen Inches long; the Length of its Body, from Breast to Rump, three Feet, the Breadth two Feet over; the Thighs, with the Legs to the Feet, are seventeen Inches long; the Legs are thick and strong, and almost five Inches about,

covered as it were with broad Scales. It has thick, hard Feet, divided into three thick Toes, all standing forwards, and wanting a back Toe, having very great Claws, almost two Inches long. It has some Rudiments of Wings, consisting only of five naked Shafts of Feathers, somewhat like *Porcupines Quills*, which commonly lie hid under the Feathers, covering the Sides; but it has no Tail. The Feathers covering the whole Body are all double; two coming out of the same Pipe or Stem, the upper somewhat the thicker, or grosser, the lower the finer and more delicate. It is commonly said to want a Tongue, because the Tongue cleaves to the Mouth as in Fishes. It feeds upon Fruits, Flesh, Bread, Hen's Eggs, Oranges, and almost any Thing that is offered it. Its Eggs are great and fair; one being measured length-ways, was fifteen Inches, and cross-ways twelve Inches, or more; of a greenish ash Colour, thick set with small Protuberances of a deep Green.

The *Dode*, called *Gallus Gallinaceus*, is said to be of a middle Size, between an *Ostrich* and a *Turkey*, agreeing much with the *African Ostrich*, if you consider its Rump, Wings, and Feathers; but in regard of the Shortness of its Legs, it looks like a Pigmy among them. It has a great Head, covered with a Membrane resembling a Hood, great black Eyes, prominent fat Neck, a Bill long and strong, not flat and broad, but thick and of a bluish White, sharp pointed and crooked. Its Body is fat and round, covered with soft grey Feathers, much like an *Ostrich's*; on each Side, instead of hard Wing-Feathers, or Quills, it has small soft-feathered Wings, of a yellowish ash Colour; and for a Tail, it has five small curled Feathers of the same Colour. It has yellow Legs, being about four Inches in Compass, and something more than four Inches in Length, covered with thick Scales. It has three fore Toes, and one back Toe, near an Inch and an half long, and its Claw above an Inch in Length. It is a slow-paced, stupid Bird, and easily taken. The Flesh, especially of the Breast, is fat, esculent, and has so much of it, that three or four of them will sometimes be enough for a hundred Men; but it is commonly salted, and stored up for Sea Provisions. It swallows Stones, and such like hard Substances, which shews it to be of the *Ostrich* Kind.

[The *Ostrich*, whose Fat is esteemed so excellent in nervous Cases, is the common Kind, the *Struthio*. *Charl. Ex.* 79. *Struthiocamelus*. *Raii Ornith.* 144. *Gesn. De Avib.* 670. The Fat, by the Relation of those who have been where it was to be had, and tried it, is one of the greatest of Medicines used as an Ointment in Contractions of the Nerves, but

but whether this be true or not, is of little Consequence to us who cannot expect often to meet with it.]

18. Of the Eagle.

Pomet. **T**HE *Eagle* is a large Bird of Prey, and the fiercest and strongest of that Kind, being scarce distinguishable from the *Hawk*, but only in Bigness, or from the *Vulture*, but by its long, black, and crooked Bill; besides which its Legs are yellow, and covered with Scales. This Bird is very well known in *Europe*, as well as other Parts of the World. There are several different Species however of it; as the *Golden Eagle*, the *Black Eagle*, the *White tailed Eagle*, the *Brasilian Eagle*, the *Sea Eagle*, and the *Vulturine*.

The Flesh of all the Kinds is hard, fibrous, and not fit for Meat or Physick. The Brain is said to cure the Epilepsy, the Testicles to procure Lust, and the Gall is the strongest of all Galls, and helps all the Diseases of the Eyes whatsoever; as Clouds, Mists, Films, Pearls, Blood-shot, Ulcers, &c. The Fume of the Dung is said to bring forth the *Fœtus*, and outwardly applied, ripens Tumors and Aposthumes. The *Eagle* is a very salacious Bird, yet lives to a very great Age. But of all that belongs to this Bird, there is nothing sold in the Shops, but a kind of Stone that is found at the Entrance of the Holes where the *Eagles* build their Nests, supposed laid there to preserve their Young from Lightnings, and other Injuries of the Weather. This Stone is brought us by the Pilgrims of *St. James* in *Galicia*. The *Eagle Stones* most esteemed, are those which are flat, blackish, and that rattle well; that is to say, which make a Noise when shaken at your Ear, which proceeds from a little Stone contained within. Great Virtues are assigned to this Stone, especially to procure easy and safe Labour, and to prevent Miscarriages. Some write, that the *Eagle* hunts for this Stone to the very *Indies*, in order to hatch, or bring forth its young ones.

[The two Kinds of the *Eagle*, which have Places in the Catalogues of Birds used in Medicine, are the *Aquila fulva, sive aurea*. *Will. Orn.* 58. *Aquila Germana*. *Gesn. De Avibus*, 149. *Aquila regalis*, *Schw. A.* 214. The *Golden Eagle*, and the *Halicætus*. *Jouf. De Av.* 93. *Halicætus sive Aquila Marina*. *Will. Orn.* 29. *Halicætus sive Ossifraga*. *Raii Syn. An.* 6. The *Osprey*. The Gall of the first is said to be good in Deafness; and the Marrow of the Thighs of the other to make Baits for Fish: But neither are ever used now.

The *Eagle Stone* is the *Ætites sive Aquilinus Lapis*, *Worm.* 77. *Charl. Fossil.* 31. Its Virtues seem altogether imaginary. There are several

Kinds of it: The *Ochreoferrus Ætites*, the *Bastard Eagle Stone*, the *Geodes*. *Woodw. Att.* 2. 9. *Boet.* 381. and the *Terra Sicula, Bæzoardicum minerale*. *Mont.* 14. which are ferrugineous Bodies containing Earth, &c. The true *Ætites* is a Pebble with a loose Nucleus.]

19. Of the Vulture.

Pomet. **T**HE *Vulture* is a Bird of Prey that is much like an *Eagle*, and has so quick a Scent, that it will smell a dead Carcase many Miles. Many are of Opinion that he differs not in Kind from the *Eagle*, but only in some other Characteristicks, as that the Head and Neck of the *Vulture* are for the most part bare of Feathers, and are only covered with a short white Down; that a little under their Throats they have about a Hand's Breadth covered rather with Hairs, like those of a Calf, than Feathers; that the Claw hangs down like a Bag before the Stomach or Breast; that the Bill being straight for two Inches, does then grow crooked; that among all rapacious Birds, none fly together in Flocks but the *Vultures*; and lastly, that the Insides of the Wings are covered with a soft Fleece of Down, which is proper only to the *Vulture*.

There are several Kinds of *Vultures* described by Authors, as the Ash-coloured, the Black, the Chesnut, the Hare *Vulture*, the Golden, the White, the *Brasilian*, and the *Vulturine Eagle*. The two first differ in nothing but their Colour. The Chesnut-coloured is less than an *Eagle*, having the whole Plumage of its Body of the Chesnut Colour; the Feathers of the Crown are very short if compared to *Eagles*, which is the Reason some have thought them bald. The *Hare Vulture* is so called from its preying upon Hares; is inferior in Magnitude, and has not a Breast so resplendent as the *Golden Vulture*, which has many Things in common with the *Golden Eagle*, but is every Way, or in all its Parts greater. The *Brasilian Eagle* is a rapacious Bird, of the Bigness of a Kite, having a long Tail, and Wings longer than it. The whole Plumage of the Body is black, with a little Tawny here and there mixed. It is headed almost like a Turkey, having a wrinkled Skin. Its Bill is long, hooked at the End, and sharp; in the Middle whereof is one large Hole for the Nostrils, transversely situate; its Eyes are almost of a Ruby Colour, with a round black Pupil. Its Flesh stinks like Carrion, for it feeds chiefly upon dead Carcasses; it is ill-looking, always lean, and never satisfied.

The *Vulturine Eagle*, though called so by the Naturalists, has nothing of the *Eagle* in him; its Shape is unusual; the Bill is straight almost to the Middle,

Middle, and towards the Point bent into a remarkable Hook, after the Manner of *Vultures*, white towards the Head, the rest of it black, the lower Chap wholly white. The *Iris* of the Eye is not so fiery as in Eagles, but whitish, and the *Pupilla* black; the whole Head whitish or grey; the Neck, half way from the Head, almost bald, set with a few white Feathers, and some small ones, like rough curled Hairs, higher than the rest of the Plumage, as if they were fine long Bristles; on the Back there is as it were a kind of Hood, reaching to the Middle thereof, and ending in a sharp Peak, resembling a Triangle. The Colour of the whole Plumage is of a dark Chestnut, inclining to black. The Fat is the only Thing belonging to the Vulture Kind that is sold in the Shops: It is used to anoint with in Palsies and other nervous Cases.

[The *Vulture*, that has a Place in the Catalogues of medicinal Birds, is the *Vultur niger*. Aldr. Ornith. 1. 271. *Vultur nigricans*. Char. Ex. 71. The Flesh, Fat, Gall, Brain, and Dung of this Bird are recommended as having their several Virtues, but none of them are ever seen in the Shops, or prescribed in the present Practice.]

20. Of the Frigate.

Pomet. **T**HE *Frigate* is a Bird which the *Indians* call so because of the Swift-ness of its Flight. The Body of this Bird is no bigger than a Pullet's, but its Stomach is very fleshy. All the Feathers of the Males are as black as Ravens. The Neck is pretty long, the Head small, with two great black Eyes, and the Sight more piercing than the Eagle's. The Bill is pretty thick, and altogether black, about six or seven Inches long, and straight to the End, where the upper Beak is crooked like a Hook: The Claws are very short, being divided into two, as the *Vulture's*, but are entirely black. The Wings are so prodigiously great, that it is seven or eight Feet from the Extremity of one Wing to the other, and that not without Reason, since his Wings are sometimes employed to carry him above three hundred Leagues from Land. It is with a great deal of Trouble that this Bird can raise himself, but when he has once taken his Flight, he keeps his Wings extended almost without any Motion or Fatigue. If the Weight of the Rain, or the Impetuosity of the Winds force him, he mounts above the Clouds, and soars beyond Sight into the middle Region of the Air; and when he is at the highest, clearly distinguishes where the *Dorado* gives chase to the Flying-Fish, and throws himself down like Lightning; not so as to strike upon

the Water, for then it would be difficult for him to rise again; but when he comes within twelve or fourteen Paces, he makes a large Turn, and lowers himself as it were insensibly, 'till he comes to skim the Waters where the Chace is given; in passing he takes the little Fish in its Flight along the Water, either with his Bill or his Talons, and sometimes both together.

The Male carries a great red Comb, like that of the Cock, not upon his Head, but under the Throat; and this Comb does not appear but in the old ones. The Females have none, but they have Feathers that are whiter, especially under the Belly. As the *Heron*s in *Europe* have *Heronries*, which are certain remote Corners of Woods, to which they retire, as Places of Refuge, where they meet, roost, preserve themselves, and multiply; so these Birds, for a long Time, made a little Island, near *Guaduloupa*, their Habitation; where all of that Species thereabout come to roost at Nights, and build their Nests in the proper Season. This little Island was called the *Isle of Frigats*, and bears the Name to this Day, though the Birds have left the Place; for in the Years 1643 and 1644, several People chased them so severely, that they were forced to abandon the Isle.

The Reverend Father *Du Tertre*, Apostolical Missionary in the *Antilles*, moved by the large Commendations given to the Oil drawn from these Creatures, by Means of two or three People, took more than an Hundred of them in less than two Hours Time. They surprized the large ones upon the Branches, or in their Nests; and as they rise with a great deal of Trouble to take Wing, it was an easy Matter to beat them down with long Sticks. There was not one of those, says this Author, that flew away, but at taking Wing vomited two or three Fish, as big as Herrings, half wasted: He believes they discharged themselves in order to fly away with the more Ease. The Oil or Fat of these Creatures is a sovereign Remedy for *Sciatica* Pains, and for all others proceeding from a cold Cause. It is held in great Esteem throughout all the *Indies*, as a precious Medicine.

[The Oil so much commended here, is obtained from a large Bird, called the *Man of War Bird*, common in many of the *American* Islands, but has never been of fame enough among us to get into use, or make it worth any one's while to import it.]

21. Of Birds Nests.

THE Birds Nests which the People *Pomet.* of *Siam* have brought into *France* for many

many Years, are nothing but an Excrement or Foam of the Mouth, of certain Birds called *King's Fishers*, which are very common in *France*, especially in *Normandy*. The *King Fishers* of *France* frequent the Sea Coast, Rivers, and watry Places; they are of the Size of a Swallow, or of a Quail; their Feathers and their Bills are of various Colours, as green, red, and blue; and they have a great many several Names; as the *Alcyon Martin*, the *Martin-Fisher*, the *Martlet*, the *Bird of St. Martin*, &c. These Animals usually build their Nests among Reeds, or upon Rocks. The *Indian King-Fishers*, especially those about the Kingdom of *Camba*, when they are going to breed, throw out of their Bills a white Froth, with which they build a Nest, of the Bigness and Shape of a Cup, where they lay their Eggs, and hatch their young ones: These Nests are of a white Colour, tending to yellow, and of a hard dry Consistence; the Taste being insipid, and almost like that of *Vermicelli*.

The *Chinese* are such Lovers of these Birds Nests, that it is almost incredible what Quantities are sent to *Pequin*, the Capital of *China*. They are usually valued at fifty *Tabers* the hundred, which is about six hundred *Livres*, or fifty Pounds of our Money. They assign mighty Virtues to this Nest; as that it nourishes extremely, being boiled in Water with a Fowl and Ginger; they reckon it very good for curing Pains at the Stomach, and for restoring those that are in a languishing Condition. These Nests were formerly little known; and it was believed that they were made of the Froth of the Sea; but since the People of *Siam* have brought them us, they are become very common. There are, besides, other Parts belonging to Birds, which we sell, and have a considerable Trade in; as Quills, Pencils, and Down from the Swans, Geese, and other Fowl, which are brought us from *Gascoigny*, *Normandy*, &c. as also the Swallow Stones, which are little Stones used like those taken out of Cray-Fish; and to take out any Filth or Dirt that falls into the Eyes.

[The *Chinese* Birds Nests are the Nests of the *Indian Swallow*, the *Hirundo Maritima*. *Aët. Phil. Lond. N^o 285. Hirundo Sinensis, Nido Edulo Bontii. Will. Orn. 15. Hirundo Chinensis. Bont. 66.* The Nests are of the Bigness of a Goose's Egg, roundish and pellucid, of a Substance resembling Gum *Tragacanth* or *Iethyocolla*. They are found on the Rocks upon the Coasts of *China* and *Japan*. When mixed in Broth or warm Milk, they swell and make a thick Soup, much esteemed in the *East*, as a Restorative, and Provocative to Venery, as well as an excellent Food.

The Swallow Stones are the *Lapis Chelidonius. Worm. Mus. 72. Bufonites minor Castanei subfusci*

coloris. Luid. Litb. p. 70. Teeth of the *Lupus Piscis, Woodw. Att. 2. 27.* They are about the Bigness of a small Pea, and said to be found in the Stomachs of young Swallows, but are really dug out of the Earth in the Isle of *Malta*, and are the Teeth of a Fish buried there.

They are hung about the Arms or Necks of Children, as a Remedy for the Epilepsy.]

22. Of Cantharides.

THE *Cantharides* are Flies which the *Pomets*. Peasants about *Paris* bring us, and which they find in great Plenty upon *Ash-Trees*, *Rose-Bushes*, and on the Blades of Corn. The Wings of these Flies are of a fine shining Green to look upon; because of their blue Colour mixed with a gold yellow; but the whole is venomous, and of a foetid Smell. They have a large Sort in *Italy*; but they are of no Use. Chuse such as are new, dry, and whole, without being crumbled to Powder.

The Use of *Cantharides*, at this Day, is chiefly external; but there are some Countries where they are frequently given inwardly, by such as understand how to prevent their dangerous Effects. They are of very great Service to the Apothecary, not only for the Blistering Plaister, that is always ready compounded by them, but to use fresh upon all Occasions where they are required. They kill the *Cantharides* with the hot Fumes of the sharpest Vinegar, enclosing them in an earthen Vessel, having its Mouth covered with a fine thin Cloth; afterwards they dry them, and putting them up in wooden Boxes, they keep them for the Space of two or three Years. These *Cantharides*, tho' rarely prescribed inwardly, are very efficacious in the Hands of a wise Physician who knows how to correct them, and make them specific, in a *Gonorrhœa*, Suppression of Urine, Ulcers of the Bladder, Stone, Gravel, &c. They are most frequently administered in a Tincture mixed with Spirit of Wine, Camphire, &c. But to promote the Expulsion of Urine, nothing can be more safe than the anointing the *Perinæum*, or lower Part of the Belly, and the Region of the Navel, with the Oil, wherein *Cantharides* have been boiled.

Some at this Time use all the Parts of the *Cantharides* promiscuously; but the Head, Wings, and Legs, are to be cast away. If a Blistering Plaister made of them be applied to a tender delicate Body, or upon fine skinned Women, it will cause a Strangury, or Scalding, and Heat of Urine, which is easily remedied by drinking of Milk, Barley-Water, or Emulsions of Almonds, or the cold Seeds. The volatile Salt of the *Cantharides*



is one of the most powerful Diureticks that is to be met with in the World; so that some Authors affirm it is able to break or dissolve the Stone. It is so pungent and biting, that it is apt to raise little Blisters upon the Tongue, when tasted; so that it is not to be taken alone, but in some smooth oily Substance, or other proper Vehicle: Dose from one Grain to three. The Tincture is more gentle, and less hazardous than the *Cantharides* themselves.

[*Spanish Flies*, as they are commonly called, are the *Cantharides*, *Mouff. Inf. 144. Cantharides Dioscoridis. Charlt. Ex. 47. Cantharides vulgares officinarum. Raii Inf. 101.* Their principal Use is in blistering Plaisters, but there are some who give them inwardly with great Success; one of the first of these was Dr. *Groenveldt*, a Dutch Physician, who practised in *London*, and after a successful Use of them for many Years, was benevolent enough to communicate what he had learnt of them to the World, in a Book entitled *De tuto Cantharidum Ufu interno*, in which he gave the Method by which he always prevented their ill Effects. The Thanks he received for this were, the being thrown into a Prison. However, there have not been wanting, both at that Time and ever since, Persons of Judgment, who have had Courage enough to try and reap the Advantage of the Discoveries he paid so severely for communicating.]

23. Of Bees.

Pomet. **T**HE *Bees*, or *Honey-Flies*, are little Insects, the Nature and Conduct of which is no less wonderful than their Labour is necessary and useful, since they furnish us with Honey and Wax; both which are very considerable Commodities. But as I never kept *Bees* myself, I have been obliged to have Recourse to a Friend, who communicated to me what, by many Years Experience, he had observed concerning them, that I might compare it with what had been said by others upon that Subject.

Some Naturalists will have it, that the Origin of *Bees* comes from the dead Lion and the Ox; and that instead of Worms that usually breed in the Bodies of other Animals, the *Bees* generate in the Bodies of these Creatures. This Extraction appears to me to be very wide of Truth, from an Experiment made by a certain Person of what *Virgil* says in his fourth *Bucolick*, which he found altogether false. The Fact is related in a little Tract supposed to be writ by a Country Clergyman, who says thus:

“ It appeared to me to be an Author of
“ Sufficiently enough to ground a probable Opinion

“ upon, and whose Credit was sufficient to in-
“ duce me to make a Trial, which I unluckily
“ did, and thought I had poisoned the whole Vil-
“ lage; for I caused to be strangled a young
“ Bull, *Bina cornua ferens*, giving him a thousand
“ Strokes with a Cudgel as he was dying, which
“ was more than I could warrant from the Poet:
“ for his Burial, I took the bruised Members,
“ with the two Horns, and put them into a great
“ wooden Tub, with four little Windows open to
“ the four Quarters of the Wind, in order, as
“ *Virgil* says, to produce Thousands of *Bees*.
“ The King is said to be bred from the Brain, the
“ working *Bees* from the Stomach, and the Drones
“ from the Guts: the King makes War upon
“ his neighbouring States, both by Sea and Land;
“ he marshals his Army in *Battallia*; he rewards
“ his Captains, and Generals; he punishes the
“ Cowards with Death, and makes the Rogues
“ and Deserters run the Gantlet; besides a Thou-
“ sand old Womens Tales, which several People
“ relate, and believe to this Day. But instead
“ of the Swarms of *Bees*, which I expected from
“ the Body of this Animal, there were Thousands
“ of Maggots produced, with an insufferable
“ Stench, that I thought would have infected all
“ the Neighbourhood: And the Stink was so great,
“ that all the Country fancied they were threatened
“ with the Plague.” You may see from hence how
false common Opinions are. And as I am not a ca-
pable Judge, I shall content myself to make some
Observations, founded upon Experience, as you
will find in the following Relations; and those
who desire to be instructed further, must consult
the best Authors who have writ upon this Subject.

Observations upon Bees, according to an Account delivered me by an understanding Person.

The Production of *Bees*, at first, is, that they breed from a Kind of little white *Germen* or *Sperm*, that is posited at the Bottom of the small Holes or Sockets, that make up the Honey-Comb, which the *Bees* make in their Hives, and which they begin at the End of the Hive. This *Sperm*, assisted by the natural Heat of the *Bees*, encreases and becomes a Kind of white Maggot, which at the beginning of its Formation, has no Resemblance of the *Bee*, but in a Month's Time it becomes like one, but of the same Colour with the Maggot, and after continuing so a little while, it grows darker coloured, and comes out of the Socket. The *Bees* generate from *February* to the End of *October*, if the Hive be in good Condition: they swarm in *May* and *June*; but the *May* Swarms are more valued, because
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they are stronger than those that are later; because the Season is more favourable, and the Heat more temperate; whereas the Swarms of *June* cannot be so successful, by reason they are usually attacked with too much Heat and Dryness at first; so that they can neither supply themselves sufficiently with Provisions for their present Occasions, nor lay up Stores for Winter.

How the Bees work their Honey.

This I have observed with particular Care and extraordinary Application, having spent a great deal of Time, watching the Hives every Hour of the Day, to satisfy my Curiosity in seeing the *Bees* work, having provided them Glass Hives for the Purpose. Towards the End of the Winter, as soon as it is gentle Weather, and the Air begins to free itself of the great Coldness; in the Month of *February*, the *Bees* venture out of their Hives, range the Fields, and bring home Wax of different Colours; as white, yellow, Lemon coloured or red, which sticks, like little Lentils, on the hinder Parts of their Thighs; and which, when entered into the Hives, they industriously quit themselves of, and form with it their Holes or Lodgments, which they compose of six Sides, thinner and finer than Talc, and almost as transparent. It is observable, that the same Hollows, or Sockets, are the Places wherein they deposit their Sperm, whence are generated the other *Bees*, and which are filled with Honey, as they become empty by the Production of the young *Bees* which they enclose. They collect their Honey-Comb, or Wax, from all Sorts of Flowers, as the Rose, the Orange, the Pease Bloom, and the Daisy Flowers.

They bring, beside the common Wax, a purplish kind firmer than the yellow, and serving them to stop the Holes and Cracks about their Hives: this Wax is of a strong Smell, and very different from the common Kind.

Of the Manner how the Bees gather their Honey, and the most proper Times to take it.

The best Season of the Year for the *Bees* to gather their Honey, is towards the latter End of *April* and in *May*, at which Times they go out by break of Day, when the Air is gentle and serene, and gather the Dew, which is more plentiful and common at that Time than any other of the Year: They return as quick as they can into their Hives, to discharge, into the Holes assigned them, the Honey-Dew they have gathered from the Simples of the Field, and which they have sucked into their Bodies, and throw it up again, as Pigeons

do their Food wherewith they feed their Young: And when they have filled a Hole or Socket with this Honey, they close and seal it up with a small Piece of Wax, to prevent it from flowing out again.

Towards the End of *June* and *July*, when the Dews are not so plentiful as during the Months of *April* and *May*, it happens still there are some dewy Mornings in which the *Bees* are not less industrious than at other Times, to make their Harvest: and likewise it falls out sometimes that the Fruits of the Earth, as the Corn and the like, are damaged by certain cold drizzling Rains, which are however favourable for the *Bees*, giving them further time to make their Harvest.

It is observable, that when they swarm, and that the young ones which compose the Swarm are come out of the Hive, they make as it were a Cloud of Flies in the Air, that looks black, and is formed, as they march out, into Squadrons and Battalions, like an Army. They follow close their Leader, or the Principal amongst them, who is much longer than the others, and whose Wings are much shorter, and who is of a reddish Colour. When they lose their Leader, they become Vagabonds, and this is a certain Loss to the Proprietor. When the Swarm are got out, they usually assemble together, and lodge upon some shady Branch, rather than in any other Place; and being there closely knit, it is then proper to hive them, for fear they should desert; for should they stay long till the Sun shines upon them, they will then separate and fly away. When they are hived it is proper to set them in the Shade from the Heat of the Sun, which might melt their new Wax.

It is also to be observed, that the *Bees* Wax, for three Years together, is very plentifully productive in breeding of the *Bees*; and that the Age of the Honey-Comb is very easy to be known by its Colour; for the first Year it is whitish, the second it is yellow, and the third brown; but when older it turns black, is barren, and without Production, and then the *Bees* cease to make Honey, and breed any more Swarms.

I have Hives made of two Pieces, in Form of a Barrel, or Sugar Loaf, cut in the Middle; so that I need not destroy the *Bees*; and I take the Honey of these Hives from Year to Year, by lifting up one Year one Part, and the following Year another, according as they are found full, and instead of those that are full of Honey I put empty ones. One very remarkable Thing is this, that *Bees* delight much near Water, and watry Places, using a great deal of it in assisting them to make Honey. I have been informed of this by several of my Friends, and particularly by an Officer of the King, who having *Bees* in a Garden at *Argen-*
hail,

teuil, where there was a Fish-Pond, the *Bees* used to go, and come constantly to take up Water to carry to their Hives; upon which I asked him, what he thought of it? And he told me, that it was a Thing he had always observed since he kept *Bees*.

Care must be taken not to have any Space or open Hole in the Top or Bottom of the Hive; for in *July* and *August* a kind of Butterflies breed and enter the Hives, and engender large, short, hard Maggots, which make a kind of Webs like those of Spiders, which joining the Combs together, produce a Heat, so that in two or three Days the *Bees* will be gone, and quite forsake it, after having pillaged it. These Maggots, tho' but few at first, will multiply so, that in less than five or six Days they will not leave one Ounce of the Honey-Comb behind, but instead of it leave their Eggs; which together with the Webs that are formed, fill up the Whole of the Hive.

It is further observable, that amongst the *Bees* there are Drones which will not go into the Fields at all; or if they do, which is not but from Noon till about four a-Clock, they bring nothing Home with them, but on the contrary eat the Honey made by others; and the industrious *Bees* kill the Drones, which are much larger and blacker than the others, and have no Stings; but when you press their Tails there appear two little Horns like transparent Skins, which are yellow at the End. In *Poland* and *Muscovy* the *Bees* make their Hives in the Trunks of old Trees, and afford Plenty of Honey, on which the Peasants almost live, without any Assistance, which is contrary to the Nature of ours. Upon this, *Munster* and *Guyen* relate a surprizing Thing: A certain Peasant falling into one of these Trees where the *Bees* made Honey, in a large Forest in *Muscovy*, as he was searching for the Honey-Comb, and not being able to get out because the Hollow of the Tree was too deep and wide, a Bear providentially coming to this Place to seek for Honey, the Peasant immediately caught the Bear by the Paw, and was drawn out from the certain Danger he was in of perishing in the Tree.

Apis, or the *Bee*, is a Sort of Fly that *Lemery* makes Honey and Wax, and is supposed to take its Name from being a Fly without Feet, which is not so in fact, for it has Feet, but carries them close to its Belly. It has four Wings; the Tongue is long, which it carries usually out of the Mouth; it has small Teeth, and the Sting cleaves to the Belly. The Antients pretended, that the *Bee* was generated from the Lion or the Bull; but the vain Trials several have made are sufficient to confute such a Notion, as

being no other than the Fancy of the Poet. Indeed we read in the Holy Scripture, that *Samson* found in the Carcass of a Lion, that had been killed some Days before, a Swarm of *Bees* and Honey; but they were never generated from the Flesh of the Lion.

The Origin of them is certainly the same as that of other Flies, but only their Production is flower; yet from the white Maggot they become a perfect *Bee* in a Month's Time. The large *Bee*, which they call the King, because of the others that attend and follow him, is a Male *Bee* that is capable of impregnating a great many Females, after the same Manner as one Bull does all the Cows of a Village. This *Bee* is much larger than the rest, but he has shorter Wings. His Colour is reddish, instead of being brown, as all the others are. The *Bee* sucks the Virtue of the Flowers, and receives it into her Pouch or Throat, from whence she disgorges it into the Hive, in order to work it up to Honey; she carries also the Wax sticking to her Thighs. The whole Insect yields a great deal of volatile Salt and Oil. They are proper, being dried, to make the Hair grow. Being reduced to Powder, and mixed with Oil of Lizards, they make a kind of Liniment wherewith they rub the Head. The essential Salt of them is so volatile, that it is difficult to keep it in a dry Form. It is a most subtle and penetrating Thing, and one of the most powerful of Diureticks and Diaphoreticks.

24. Of Honey.

WE have three Kinds of Honey in *Pomet*. *France* brought from several Parts, viz. *White Honey*, which is made without Fire, which some call *Virgin Honey*, as well because it flows of itself, without pressing, as because it is made from the first Year's Honey-Comb. The second sort is made of all kinds of Honey-Combs put together (after being well cleansed) into a Bag, from whence by the help of pressing there flows a white Honey, but very different from the former; not only because it is not of so fine a white, but because the Taste is not so agreeable. The third is the *Yellow Honey*, which is made from the Combs put over the Fire in a Kettle, with a little Water, and then put into Bags, and squeezed. The *Yellow Honey* is more or less fine, according to the Degree of Heat it receives; for if it be too much heated, instead of being a fine Yellow, it will be brown, and of an ill Smell. They say likewise, that the Honey is more or less beautiful and good, according to the Quantity of Water which is used to heat it.

The finest and most esteemed *Honey*, is that of *Languedoc*, which is white; especially that of *Corbiere*, a little Borough about three Leagues beyond *Narbonne*, which is the Place from whence comes the whitest and purest *Honey*, commonly called *Narbonne Honey*, tho' falsely so; for at *Narbonne* they do not know what you mean by *Narbonne Honey*, but are very well acquainted with that of *Corbiere*: the Name has been given to it, because *Narbonne* is a great City, and much better known than *Corbiere*, which is but a small Place. This true *Honey*, to have its proper Qualities, ought to be new, thick, candied, and entirely like Sugar-Royal, of a sweet piquant Taste, and a little aromack. Next after this is that of other Parts of *Languedoc* and *Provence*, but very much different and inferior to that of *Corbiere*; not only because it is never so white, but because it is not so pleasant to the Taste or Smell, and has not the Rosemary Smell of the other, unless it is given it by Artifice. The third and last Sort is the white *Honey* about *Paris*, of the Country for twenty or thirty Leagues round, which gives it the Name of *Country Honey*; this is met with sometimes so good, that, except in Smell, it is scarce inferior to that of *Corbiere*; that the *Narbonne Honey* must excel in these, may be readily granted, because the Taste and Scent of *Honey* proceeds from the Plenty and Goodness of the Flowers with which the *Bees* are fed. And as *Languedoc* and *Provence* are warm Countries, and consequently full of aromackal Herbs and Flowers, as Thyme, Rosemary, Stœchas, &c. therefore the *Honey* is better, and of a more pleasant Smell, and more bought up, especially to make pectoral Puffs of, which is its chief Use; the *Country Honey* being principally employed in the great Compositions, and to eat in *Lent*.

As to the yellow *Honey*, the best that comes to *Paris*, and the most set by, is that of *Champagne*, which to be good, should be fresh or new, of a good Body, of a golden Yellow, the most candied, and least full of Wax that may be; the Fault otherwise proceeds from the ill making of it; but the true *Champagne* is of much the best Sale, and of more Virtue than all the *Honeys* brought from several other Parts, as *Tourain*, *Picardy*, and especially *Normandy*, which is ill-scented, reddish, and of a very bad Sale, tho' it is more purgative than that of other Parts. This *Honey* is very easily known, both by the Colour and Smell; and likewise because it usually comes in Stone Pots, such as Butter comes in from *Normandy*. This *Honey*, tho' not so fine as the others, is yet very proper for the Apothecaries to make *Honey of Roses*, *Violets*, or the like. There are several

other Ends this *Honey* serves for; as to distil into a Water, Spirit, or Oil, which are reckoned proper to make the Hair grow, and to take out Marks, Spots, or Freckles in the Face. Some likewise assign to the Spirit of *Honey*, well rectified, the Power of dissolving Gold or Lead.

Mel, or *Honey*, is a compounded Body *Lemery*. of divers Parts of Flowers, which the *Bee* extracts, and receives into her Stomach to carry to the *Hive*, where she disgorges herself, and fills her Cell which she has made in the Honey-Comb before for that Purpose. There are two Sorts of *Honey* in general; one white, and the other yellow: The white is made of the first Year's Stock, without Fire or Pressing, which is called *Virgin-Honey*; and the second is pressed from the Wax, with Force, and by the Addition of Heat. The white *Honey* is finer, and more pleasant for the Palate, and consequently better for internal Uses. The yellow has a little more Acrimony than the white, and therefore is more laxative, and externally a good Deterfive. Raw *Honey* is apt to gripe and swell the Belly, but being clarified, it opens, cleanses, nourishes, and restores in Consumptions; is pectoral, diuretick, and one of the best Ophthalmicks in the World.

The several Preparations made of *Honey*, and commonly sold, are, Clarified *Honey*; the Spirit, Oil, and Water, the Tincture, and Vinegar, with Mead, Metheglin, and Hydromel. Clarified *Honey* is made with the Whites of Eggs; the Water, by putting *Honey* into a large Glass, or earthen Body, and distilling in Sand with a gentle Heat, until acid Drops begin to come; then cease the Fire, and keep the Water for Use. To make the Spirit and Oil, take what remains in the Retort foregoing, and put it into an earthen one, or glass one coated; but let it be so large, that two thirds of it may be empty: Place your Retort in a reverberatory Furnace, with a large Receiver, luting the Juncture; begin the Distillation with a small Fire, for about three Hours, to warm the Retort; then increase it by little and little, so will the Spirits come forth, with a little black Oil, and fill the Receiver with Clouds; continue the Fire till all is come over, then separate the Spirit from the black stinking Oil by Filtration; the Spirit will be in a pretty Quantity, the Oil little and inconsiderable. The Spirit of *Honey* is an excellent Aperitive, cools the violent Heat of Fevers, quenches Thirst, and strengthens the Stomach, and may be put into Juleps, to give them a pleasing Acidity. It may be rectified by distilling it in a glass Cucurbit in Sand. What ascends first is Flegm; that which rises last is the strongest

strongest of all, and is used to cleanse old Ulcers, as the Oil is to scale rotten Bones.

Tincture of *Honey* is made of pure *Virgin Honey*, mixed with washed Sand or Bone-Ashes, whereon is thrown the best rectified Spirit of *Honey*; then let them stand in Digestion in a Cucurbit, having a flat Bottom, till the Spirit is tinged of a golden Colour, which decant, pouring new Spirit upon the Fæces, so long till it will be no longer tinged; mix the tinged Spirits together, and abstract in *Balneo Mariæ*, till only a third Part remains, which is the Tincture, and one of the noblest Medicines for inveterate Coughs, Phthificks, and Catarrhs, from a Quarter of a Spoonful to a whole one. *Mead* is composed of one Part of *Honey* to eight Parts of Water, well boiled, and worked up with Yest Blood-warm, or clarified with the Whites of Eggs, Shells and all: Some add Aromaticks; as Cloves, Nutmegs, Cinnamon, Lemon-Peel, and Ginger; others Alteratives, as Thyme, Marjoram, Mint, Balm, Rosemary, Cowslip, &c. some Diureticks, as Sweet-Briar, Eryngo, Tamarisk, &c. and so every Person makes it to his Fancy, whether for medicinal Uses, or other Purposes. *Metheglin* is made of one Part *Honey*, and four Parts Water; to which may be added, Balm, Sage, Mint, Rosemary, Thyme, Bay-Leaves, Angelica, Savoury, *Roman* Wormwood, Geranium Moschatum, Origanum, Nutmegs, Mace, Cloves, Cinnamon, Ginger, or the like, in the boiling of the Liquor; and in tunning of it up, some add black Currants, others Raisins of the Sun. To make *Hydromel*, take of the best *Honey* eight Pounds; Raisins four Pounds; Tamarinds half a Pound; fifteen Quarts of Water; boil all so long till an Egg will swim on the Top; let the Fæces settle; then decant the clear Liquor into a Cask, adding to every five Pounds four Ounces of Spirit of Wine rectified; let it stand six Months, and then drink of it as you please. All the Preparations of *Honey* are pectoral and diuretick.

25. Of Bees-Wax.

Pomet. **B**ESIDES the different sorts of *Honeys*, and the Uses made of them, we have a great Trade in yellow and white *Wax*. The first sort is made from the Pressing of the Honey-Comb over a Fire, with a sufficient Quantity of Water; and when all is dissolved, they strain it through a Cloth; this done, they melt it, and scum off the Dross and Froth, and afterwards cast it into Cakes. Some Persons, to refine the *Wax*, use *Roman*, or some other Vitriol; but for my own Part, the best Secret I know of, is to purify it well by melting.

That which we call *Wax*, is, in its natural State, the Honey-Comb which contains the Honey in the Hive. *Poland*, *Barbary*, *Bretagne*, and several Parts of *France*, furnish us with a great deal of yellow *Wax*; but that of *Dantzick*, *Bretagne*, and *Champagne* is reckoned the best; but it is of no Consequence what Place it comes from, so it be pure and of a good Kind. Chuse such as is of a high yellow Colour, a good Smell, easy to break, and that does not stick to the Teeth; and take care that it be the same on the Inside as the Outside; and, when in large Cakes, as that from *Dantzick*, that there be no Water, Stones, or Earth in the Middle, or that it be not mixed with Resin, white Frankincense, or Pitch, or coloured with Turmerick or *Roucou*.

The Use of yellow *Wax* is considerable for several sorts of Works; as Tapers, Candles, and other *Wax*-works. It is of great Use in Medicine; for it serves to give a Body to Ointments and Plaisters; and likewise to make Sealing-wax for great and less Deeds. Some will have it, that yellow *Wax* has no Virtue in Physick. But by the Retort there is made with *Wax*, mixed with Earth, Bole, or Oak-ashes, a white thick Oil, like Butter, which is called Butter of *Wax*, which ought to be white, and have the Smell of *Wax*. Of this Butter, together with Bole, Chalk, or the like, in Powder, by means of a Glass Retort on a Sand-fire, they draw a clear white Oil, like Water, that is of an agreeable and pleasant Smell. The Butter and Oil of *Wax* are much valued for the Cure of Chilblains, especially those that are apt to chop, and other Maladies of the like Nature. That which remains in the Bags, after the *Wax* is strained out, is nothing else but the dead Bees and other Filth: It is used by the Farriers. We meet with, besides this, in the Hives, a kind of red *Wax*, called *Virgin Wax*, or *Propolis*, which is that the Bees use to stop up the Chinks or Holes of the Hives, to hinder the cold Air from entering. And therefore the more Cracks or Holes there are about a Hive, the more *Propolis* will be found there.

This was once much used, but at present is hardly known in the Shops, though it is very good in nervous Cases.

Of White Wax.

The *White Wax* is made out of the yellow, cut by a certain Engine into small Flakes, and then bleached in the Sun, by which it will become very white. It is then cast into round Cakes, some thicker, some thinner. That is the best which smells well, and chews hard, not being mixed

mixed with Sheeps Suet, and is withal of a clear Colour, without any Cast of Yellowness. The best, and most proper to turn white, is the yellow *Wax* of *Breigne*, which when it is well made, as that usually is of *Chateau Gontier*, eight Leagues from *Angiers*, which passes for the best Sort in *France*, will be pure, white, clear, transparent, in thick Cakes, that, when broken betwixt the Teeth, does not stick, neither has any ill Taste or Scent.

It is with this fine *Wax* we make the finest Works; as Tapers, Wax-Candles, Flambeaux, Figures, and other Curiosities in Wax. And we reckon, after the *Chateau Gontier Wax*, the second Sort is that of *Angiers*; the third that of *Mans*; the fourth that of *Holland*, which is generally brought in great Cakes of four or five hundred Weight; and the first Sort is that we call the *Dutch Wax Royal*; the fifth is that of *Amboise*; the sixth of *Chaumont* near *Troyes*; the seventh and the worst is that of *Roien*, because of the great Addition of Suet they put in, and it is better or worse according to the Quantity of Suet that is mixed with it.

[*White Wax* is emollient and less resolvent than the yellow; because the Dews have washed away a great Part of its Salts.]

Of the soft Red and Green Wax.

The soft *Red Wax* is made of *White Wax* melted with Turpentine that is washed, and then coloured with Vermilion or Alkanet. This Wax ought to be of a good Consistence, a fine Red, and well made. The chief Use of this, as well as the Green, is for the Lawyers to seal Writs and Deeds with. The *Green Wax* is made the same Way, only Verdigrise is used instead of Vermilion.

Of the Black Indian Wax.

In several Parts of the *Indies*, as well *East* as *West*, they have little Bees, which hive, or make their Nests in the Hollows of certain Trees; the Figure of which is in the Plate of Bees. These Bees deposit their Honey in little Cells of black Wax, which are of the Size and Shape of Pigeons Eggs: The Honey is very peasant, and of an Amber Colour. The *Indians* use this Wax to make Tapers of, and gather from the Tree the Balsam called *Tolu*, in Vessels made of it. Some Authors say, that there is an Animal like a Cat, that is black, which the *Indians* call *Hierat*, or the Honey-Beast, which climbs the Trees, and eats all the Honey; and that which is surprizing is, that this Animal draws out the Honey-Comb with his Paw, and does no Damage to the Bees; and the

Bees do not hurt him, because they have no Stings like ours. This Wax was formerly much used in *Spain*, and a little in *France*; but at present we know not what it is, being one of the scarcest Drugs we have. All the Kinds of Wax are naturally composed of Oil, volatile Salt, and Flegm, without Earth; being emollient, resolutive, and proper for Ointments, Cerecloths, and Plaisters.

[The Bee, like all other living Creatures, is produced from a Male and Female of the same Species. There are in every Hive three Sorts of them, the Males, or common Bees; and the Drones which are the Males, and have no Sting; and the Females, or Queens, commonly but one in a Swarm, in which are perhaps a hundred Drones, and ten thousand common Bees. The Queen will, in one Summer, give Birth to eight thousand young ones. As to the Honey, notwithstanding that the White is generally preferred, the Yellow is best in Medicine, as it is not so apt to candy, and is more spirituous.]

It is penetrating and deterging, and therefore good in all Obstructions from viscid Humours, but not proper in thin hot Habits. Many Authors relate that Honey has been found in Places where there were no Bees; but as they never talk of its being formed into a Mass, or lodged in Combs, in all Probability they only mean a Honey-Dew, which is indeed what the Bees make their Honey from.

The Chymical Preparations of Wax are but little used, but more than half the Ointments and Plaisters of the Shops owe their Consistence to it.]

26. Of Ambergrise.

Ambergrise is the dearest and most valuable Commodity we have in *France*, and the least understood, its Nature and Origin being the most contested; if I should relate what Authors have said upon this Subject, it would make a Volume of itself. But to reproach nobody, and not to repeat what so many Authors have said, I shall affirm, that *Ambergrise*, which we have brought us from several Parts, and chiefly *Lisbon*, is nothing else but a Mass of Honey-Combs that fall from the Rocks into the Sea, or are torn off by the Waves of the Sea, the Violence of the Winds, or otherwise. These Honey-Combs being in the Sea, whether by a Property of the Sea-Water, or by the Virtue of the Sun Beams, are rendered liquid, and floating upon the Water, as they are often found.

Many Persons will be surprized at what I advance, that *Ambergrise*, whose Nature hath been hitherto

hitherto so little known, comes from nothing but Bees Wax, which I could not have affirmed, if a Friend of mine had not assured me, he had seen a Piece that was one half *Ambergrise*, and the other half Wax; and to confirm what I say, Mr. *De Monconys*, Lieutenant-General of *Lyons*, at Page 71, of his *Voyages*, affirms that he was informed in *England*, that *Ambergrise* was nothing but Honey-Combs the Bees make upon the large Rocks, which are on the Sea-side in the *Indies*, which heated by the Sun, loosen and fall into the Sea, and by its Agitation are brought to Perfection; and that having broken a large Piece of *Ambergrise*, which was not yet perfectly concocted, he found in the Middle of its Substance, the *Honey-Comb* and the *Honey*, both together: And for further Confirmation of this, we may add, that when the *Ambergrise* is dissolved in Spirit of Wine tartarized, there remains at last a Substance entirely like Honey. *Ambergrise* therefore appears to be no other than the Production of the Honey-Comb, by the large Masses it is sometimes found in, not indeed of three Hundred Weight, as some have writ, but however of thirty or forty Pounds.

Mr. *Tavernier*, amongst other Things on this Subject, says, that in the Year 1646, or 1647, a *Zealander*, that was of one of the best Families of *Middleburg*, who was Governor for the *Dutch East-India Company* in the Isle of *St. Maurice*, which is on the East of *Madagascar*, found on the Shore a Piece of *Ambergrise* forty-two Pounds Weight, which he sent to the Company; but, as such Persons have ever some Enemies, and the Piece appearing as if something had been taken from it on one Side, the Commander was accused of having taken half, of which however he justified himself at *Batavia*.

As to the Choice of *Ambergrise*, which some have called by the Name of *Oriental Ambra*, let it be in fine Pieces, of a greyish Colour on the Outside, marked with little black Spots within, of a sweet pleasant Smell; and meddle not with that which is soft, fat, musty within and without, and which is full of Dirt and Filth, that is got when the *Ambergrise* was liquid, or before it gained its Solidity. The best Trial of it is a Dissolution in Spirit of Wine; for that which is purest, and leaves the least *Pieces*, is the best. The Fictitious is known by the Smell as well as Colour; the Materials of which it is made, appearing either too black or too white: they are commonly Musk, Civet, Alocs Wood, Storax, *Labdanum*, Goat's Blood dried, &c.

Ambergrise, besides its Use for the Perfumers by reason of its excellent Scent, is a very good

Medicine to warm the Stomach, and prevent the Cause of the Gout from attacking the vital Parts; it refreshes the Animal Spirits by its volatile Sulphur, strengthens the debilitated Parts, and restores in Consumptions. As *Ambergrise* is a very dear Commodity, those who buy Quantities of it, must take great Care that there be no Mixtures in it, or that it be not counterfeited. The Fineness of the Substance of this Drug, is the Reason that it is never exposed to the Violence of the Fire, but only dissolved in Spirit of Wine, or Spirit of Roses, or some such like *Menstruum* to prepare it, exalt its Smell, and separate it from its earthy Parts: And this is called by the Name of *Tincture* or *Essence* of *Ambergrise*.

Of Essence of Ambergrise.

Essence of *Ambergrise*, used by the Confectioners, Perfumers, Distillers, and others, may be made after these several Ways: To make Mr. *Charas's* *Essence*, take choice *Ambergrise*, two Drachms; Sugar-candy, two Drachms; Spirit of Wine, four Ounces; ardent Spirit of Roses, half an Ounce; put them into a Glass Matraass, with a blind Head, luted in the Junctures, set in the Heat of the Sun, Horse-Dung, or Sand; dissolve and make a Tincture; decant the clear, and keep it for Use in a Glass close stoppt: The Dose internally is three Drops in Cinnamon-Water, or any restorative Liquor. Another *Essence* is made thus: Take *Ambergrise*, and white Sugar-candy, in Powder, of each two Drachms; Musk one Drachm; Oil of Cinnamon, Citrons, Oranges, Roses, Lavender, of each two or three Drops; mix and beat it up into a Paste, and dissolve it over a gentle Heat, in Spirit of Wine, in a Bolt Head; or you may make it with *Ambergrise* alone, in Spirit of Wine tartarized, digesting in a Sand Heat, or Horse-Dung, for some Time.

The Way to make any odoriferous Thing yield its Scent, is by opening the Body of it (which done, the Smell exerts and diffuses itself immediately) in such Vehicles as have Power either to dissolve the separated Particles, or extract their *Sulphur* or *Tincture*. *Ambergrise* is opened by grinding it first with Sugar-candy, then with Oil of *Ben*: It is also opened by grinding it with the Yolk of an Egg, and several other Ways. *Ambergrise*, in its natural State, scarcely affords any Scent at all; but if it be opened, and excited by Solution, with a convenient Proportion of Odours and volatile Sulphur, such as that of *Civet*, it presently yields a sweet and pleasant Flavour. For Example: Take ten Grains of *Ambergrise*, and three of *Civet*; beat them together in a Mortar, and the *Ambergrise*.

grise will presently melt; upon which, put two or three Drops of Juice of Lemons, so will you have a Perfume of an admirable Sweetness. There is besides the *Ambergrise* we commonly sell, a white Kind which is used in the Delicacies at the Tables of Persons of Quality; as also a black Kind like *Liquid Labdanum*, which is said to have been thrown out of the Stomachs of Fish that had kept it there some Time; this is used by the Perfumers, because it has an agreeable Smell, and is cheap. All the Kinds are found on the Sea Shores, particularly those of the *Archipelago*, because of the frequent Earthquakes that Part of the World is subject to, which dislodge all the Combs the Bees make on the Rocks at the Sea Side.

Ambra-grisea, seu Ambra Cineritia, Lemery. or *Ambergrise*, is a valuable Commodity.

It is very dry, and almost as hard as a Stone, light, opaque, greyish, and scented: It is found in Pieces of different Bigness, floating upon the Water in several Parts of the Ocean, as towards the Coasts of *Muscovy* and *Russia*, and particularly in the maritime Parts of the *Indian Seas*. There was a Piece of a prodigious Size, that was said in the Year 1694 to be carried into *Ireland*, that weighed 182 Pounds. The *Naturalists* have differed much in their Opinions concerning the Production of *Ambergrise*, 'till of late it seems to be universally agreed, that it is made from the Honey-Combs that fall into the Sea from the Rocks, where the Bees had formed their Nests; and this is confirmed by Experience, because several Persons have seen Pieces that have been one half *Ambergrise*, and the other nothing but the plain Honey-Comb: And others again have met with large Pieces of *Ambergrise*, where, in breaking of it, they have found in the Middle the Honey-Comb and the Honey too. Chuse such as is clean, well dried, light, and spotted within with little black Spots, of a sweet pleasant Smell; but avoid the moist, soft, and foul *Ambergrise*, as being good for nothing: It is called *Ambra Cineritia*, as being of an ash Colour. It strengthens the Brain, the Heart, and the Stomach; procures Alacrity, and makes the Spirits gay, provokes Lust, and is a good Antidote against Poison or Infection in Men; but raises the Vapours in Women, therefore let them avoid it. We meet sometimes, amongst the Druggists, with a white *Ambergrise*, which differs from the other not only in Colour, for it is nothing so strong, nor half so good. There also is a black *Ambergrise*, but it is good for nothing in Physick, and but of very little Use for the Perfumers.

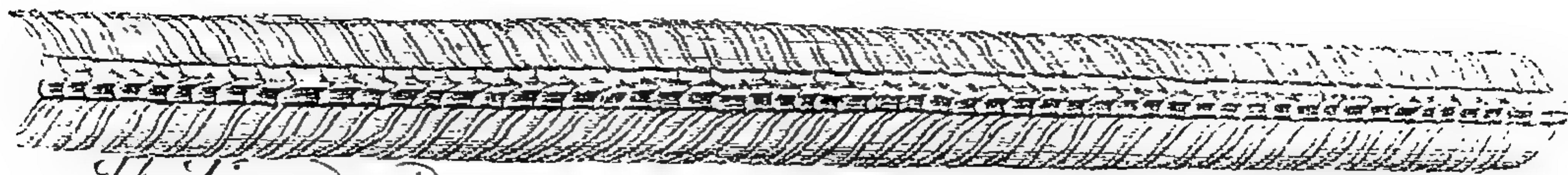
[*Ambergrise* is the *Ambra*, *Aldr. Mus. Met.* 430. *Succinum griseum, Ambragrisea vulgo, Char.*

Foss. 15. *Ambragrisea, Mont. Ex.* 12. There have been a Multitude of different Opinions about the Production of this precious Perfume; but the true Account of it is, that it is a soft Bitumen, oozing out of the Bottom of the Sea, and afterwards hardening. It frequently contains small Stones, Pieces of Shells, and the Beak Mouths of Fish of the Calamary Kind, which have been mistaken for the Beaks of Birds. It picks up these while soft at the Bottom of the Sea.

Ambergrise was unknown to the antient *Greeks*, for no Author mentions it before *Aetius*. It is an excellent Cephalick and Cordial, enlivens the Spirits; and is very effectual in Faintings, and all other Affections of the Head and Nerves, and among the Eastern People is greatly esteemed as a Provocative.]

27. Of the Viper.

THE *Viper* is a Kind of Serpent that *Pomet.* is very common in several Parts of *France*, but chiefly in *Poitou*, from whence almost all the *Vipers* come that we sell at *Paris*. These Animals were terrible or frightful to all the World heretofore, but they are very familiar to us at present; inasmuch that there are very few People of Quality in Places where they are to be had, but what make Use of them as good Diet, and a specific Remedy against several sorts of Diseases. This may be seen in Mr. *Charas's* Treatise of them, wherein he has produced all that can be said on that Subject; to which the Reader may have Recourse at his Pleasure. I shall content myself in directing him to chuse the largest, liveliest *Vipers*, and such as are newly taken; and to take Care that they are put into temperate Places, because extraordinary Cold or Heat is hurtful to them: They ought likewise to be careful when they receive any fresh *Vipers*, to take them out of the Boxes they are brought in, and to take from them the dead ones, if there are any, as sometimes it happens; and to put them into a Tub with Bran or Moss; not that it serves them to feed upon, as some fancy, because these Creatures never eat after they are taken; and notwithstanding this, they will continue alive six Months. It is likewise to be observed, that they are to be taken either by the End of the Tail, or else with a Pair of Tongs; because this Animal, when he finds himself squeezed, bites whatever he meets with; and the Biting of the *Viper* being very dangerous and even mortal, is the Reason why the Takers of them ought to be very cautious. The Keepers of them ought to be so likewise, lest by Mischance they should escape and get into any House, which would be very

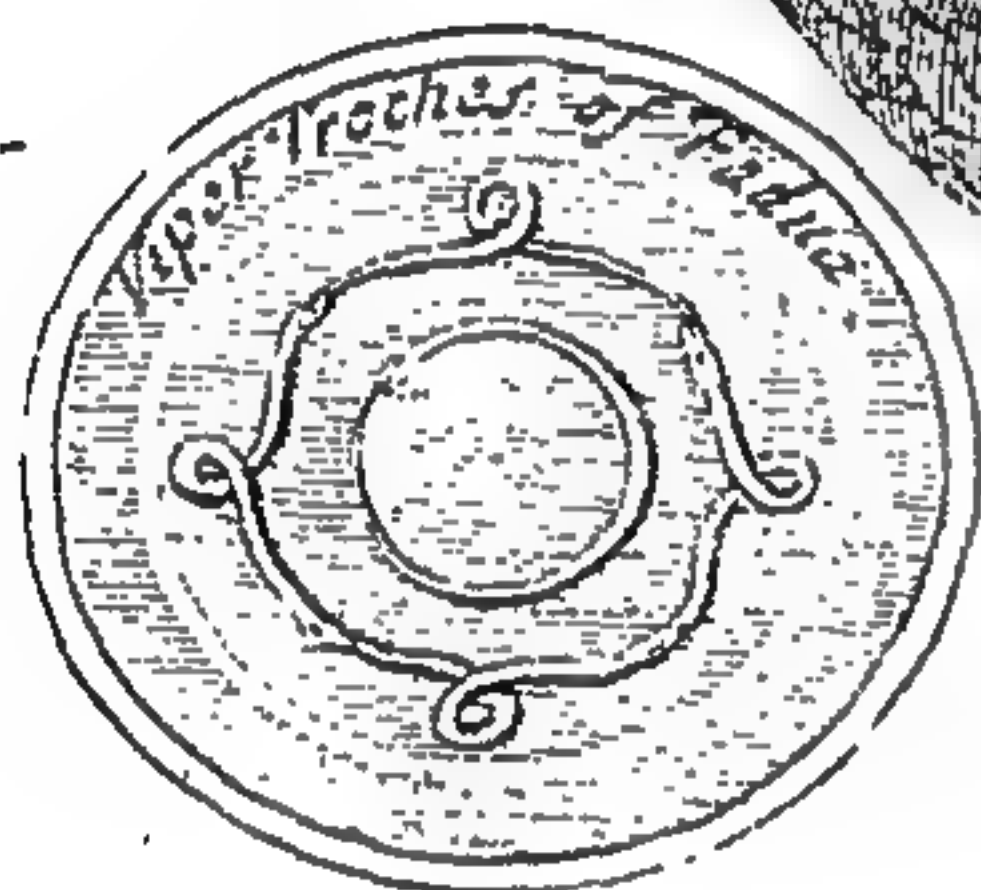


The Viper dry'd.

27.



Heart & liver of a Viper.

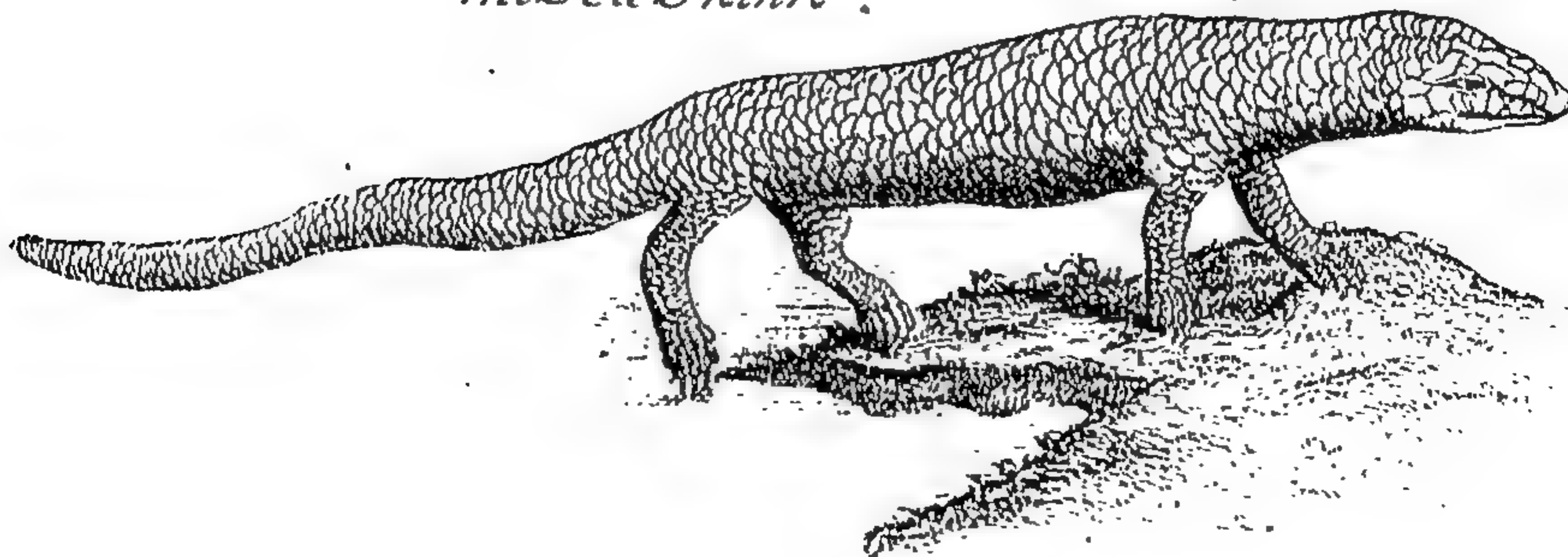


A Viper bringing forth Young ones.



29

The Sea Skink.



very dangerous, especially where there are Children.

We have a great many dried *Vipers* brought from *Poitiers*, which ought to be heavy, large, long, well dried, and the freshest killed that can be got; for in a little Time after they are dead, the Worms will eat them in such a Manner, that nothing will be left but the Skeleton. You ought to be careful likewise, that every Bundle or Parcel of *Vipers*, which is usually a Dozen, have the Hearts and Livers along with them, these being the most noble Parts of the Animal, and weigh three Ounces and a half; and sometimes, but very rarely, four Ounces; and take Care they be not such as have died of themselves, which you may easily discern, by their extraordinary Blackness. Some will say, that there are Snakes sold for *Vipers*; but this I cannot affirm, having never known it to be done at *Poitiers*. There is, besides, a great deal of *Vipers* Powder sold; but those that buy it should take special Care, because there is nothing more liable to be adulterated. The Hearts and Livers, reduced to Powder, and sifted through a fine Silk Sieve, is what some call *Bezoar Animal*, pretending that this Powder, thus made, has the same Virtues with the *Oriental Bezoar*, treated of before.

They bring us also from *Poitiers*, the volatile and fixed Salt of *Vipers*, the Fat, and the black Oil that is made by the Retort, whose Virtues and Preparations you have thus described by Mr. *Charas*. Take *Vipers*, all their Parts very well dried, cut them into small Pieces, with which fill a large Retort of Earth, or Glass well coated; fill it almost quite up to the Top, fix to it a very large Receiver, luting the Junctures well, place it on a naked Fire, in a close Reverberatory Furnace, with its Dome; shut up the Register of the Dome, and the Door of the Fire-place, make a gentle Fire in the Cinder-place, which keep on Foot for two Hours, only to heat the Retort and Furnace; then removing the Fire into its Place, keep it in the same Heat for two Hours longer; at the End whereof encrease the Fire one Degree, giving a little Air to the Register of the Dome, continuing it so for two Hours more; and encrease the Fire to the third Degree for the same Time; after which set the Register of the Dome quite open, encreasing the Fire to the highest Degree, which continue so long till nothing comes out of the Retort, and that all the Vapours in the Receiver be converted into Salt or Liquor; then cease the Fire, and the Vessels being cold, unlute the Receiver, and dissolve the Salt in the Liquor, or Spirit.

To rectify it, put all this distilled Matter into a Glass Matrafs, with a long Neck; place it in a

Sand Heat, cover it with its Head, and join to it a small Receiver, luting well the Joints, and give it a gentle Heat, so will the volatile Salt ascend, white and crystalline, to the Top of the Head, which take and put up into a Glass Bottle, stopping it very close. Continue the Rectification, separating and keeping apart the Spirit, which is the remaining Part of the volatile Salt, dissolved in some Flegm, and the Oil; and cause all the volatile Salt, and oily Parts, to ascend, casting away that which lies at the Bottom of the Matrafs, as a Thing of no Use.

This volatile Salt of *Vipers* is reckoned an Antidote against Poisons, and a perfect Cure for the Biting of the *Viper*, or any other Kind of Serpent, or venomous Creature: It is also prevalent against the Measles, Small-Pox, Plague, or Pestilence. It resists Putrefaction in the highest Degree, becomes specific in intermitting Fevers, chiefly the *Quartan*; and there is scarce a Medicine known in the World more able to purify the Mass of Blood, and give it its natural Fluidity: whence it does such considerable Feats in chronick Cases; as Scurvies, *Erysipela's*, Scald Heads, and strumous Breakings-out; causing the foul impure Humours to perspire through the Pores of the Skin. It is also one of the most powerful Remedies in Nature for Gout, Rheumatism, and Venereal Relicks; for it opens, penetrates, attenuates, and is sudorific; so that it drives out any corrupted or malignant Humours, through the Habit of the Body; it dissolves coagulated Blood, removes Inflammations, prevents Aposthumes, and cures Pleurifies. This Salt is very aperitive, and opens Obstructions both of the Head and other Parts; and relieves all Diseases of the Brain and Nerves; as Palsies, Convulsions, Vapours, Fits of the Mother, and the like; so that both for external and internal Uses, there is scarcely found a more universal Medicine.

All other Preparations of *Vipers*, as Powders, fixed Salts, Tinctures, Decoctions, Broths, Jellies, Wines, Essences, Troches, Elixirs, Extracts, &c. compared with the volatile Salt, are nothing, for in that is to be found the Sum of all that is in the *Viper*: The Oil is so foetid, that it cannot be taken inwardly; outwardly it may be used to smell to, and to touch the Nostrils with in Vapours and Fits; but if it be made into an Elixir, with Spirit of Nitre, and Spirit of Wine tartarized, it is a most fragrant Medicine, cheers the Spirits, suppresses Vapours, and invigorates Nature to a Miracle.

Le Febvre teaches us how to fix this volatile Salt, which is done by Acids, viz. with well rectified Spirit of Salt, dropping it upon it, dissolved in its own Flegm, 'till the Effervescency and Strife

ceases, by which the volatile Salt is united to the Acid: Now though there be no great Need of this, yet it may be of some Use to watry Stomachs; and though the Taste and Shape of this Salt, thus fixed, much resembles Bay Salt, it is quite another Thing in its Effects. This is evident by mixing it with double its Weight of Salt of Tartar, and subliming in proper Vessels; for then the volatile Salt will ascend with its first Force, Strength, and Virtue.

Vipera, or the *Viper*, is a kind of *Lemery*. Serpent, which comes alive out of the

Belly of its Parent, and not from an Egg, as the other Kinds do. It is about as long as one's Arm, and two Inches thick; sometimes bigger, and sometimes less, but never arrives at the Size of the large *Snake*, though in outward Appearance they are very like them. They are covered with a smooth Skin, a little scaly, on the Backside of several Colours as in Waves, soft and viscous underneath, and of very close Pores. The Jaws are set on both Sides with little Teeth, like the Snakes; but besides these little Teeth, there is on each Side a kind of a Tusk, or a long, sharp, cutting Tooth, that is sometimes forked. In the Jaw is a Bladder, full of a yellowish Liquid; the Tongue is long and cloven, which it darts out with great Violence; being provoked, it looks like a Firebrand, which proceeds from the quick Motion or Agitation of the Spirits. This Tongue was supposed to be venomous, but it contains no manner of Harm in it: The Eyes are very small. The *Vipers* breed in wild stony Places in *Dauphiny* and *Poitou*: They live, being at Liberty, on Rats, Frogs, Worms, and several other Insects; but when taken and confined, they will live about a Year, without any other Subsistence but the Air they receive by the little Holes made in the Tubs or Chests wherein they are kept: The Reason why they live so long without eating, is, because the Pores of the Skin are so closely contracted, that they emit but very little Spirits or *Effluvia*.

They take the *Vipers* in Spring Time, or Autumn, because they are then fatter, and more active than in any other Season: The Peasants take them with little wooden Tongs made for that Purpose, and carry them in Bags to the Apothecaries. They are much more sprightly and gay when they are in the Field, than after they are taken, because they then draw themselves up into a narrower Compass, and contract their Pores. These differ from other Serpents, not only as to the two Teeth that are in their Jaws, but likewise by a different Connection of their *Vertebrae*, which hinders them, when they are taken by the Tail, from twisting

and turning about the Arm or the Tongs, as the Snake does.

The *Viper* bites with his long Teeth, and shoots into the Wound a Spirit, or very volatile acid Liquor, which insinuates into the Vessels, coagulates, by little and little, the Blood, and interrupts the Circulation; from whence flows Death, if not prevented. This Effect has a great deal of Analogy with that which happens upon syringing, through Curiosity, some acid Liquor into the Veins of a Dog, or other Creature; for in a short Time he falls into Convulsions and dies.

The Accidents which attend those who have had the Misfortune to be bit by a *Viper*, are first of all, that they grow pale, and then turn bluish, as the Blood is more or less tinged in the Veins and Arteries. In the second Place, they become restless, melancholy, and sleepy; the Pulse intermitting, because the Course of the Spirits being intercepted by the *Coagulum* that is made in the Vessels, the Blood cannot circulate but with Difficulty. In the third Place, they are chilly or cold, have Inclinations to vomit, and convulsive Motions; because the saline and acid Particles which are introduced into the Blood, and which are pungent, prick or irritate the internal Coats of the Veins and Arteries. And lastly, they die, because the Blood growing sharper, and coagulating still more and more, the Passage of the Spirits is entirely stopped, and there can be no Circulation, without which they cannot live.

The Remedies against the Biting of *Vipers* are external and internal. The external are, the speedy binding of the Part wounded, if possible, making the Ligature tight, in order to hinder the Poison from spreading further; but if the Part that is bit cannot be bound, you ought instantly to apply upon it the Head of the *Viper* that did the Mischief, after being bruised, or else that of another *Viper*; otherwise, to heat a Knife, or some Piece of flat Iron red-hot, and hold it near the Wound as hot as the Patient is able to bear it; or to burn upon the Wound a little Gun-powder; or else scarify, and apply Treacle with Garlick and Sal Armoniack bruised together.

These external Remedies open the Pores of the Wound, and make the envenomed Spirits flow; but it ought to be observed, that these sorts of Medicines should be used upon the Spot where the Biting is made; for if there be Time given to the Poison to enter into the Vessels of the Body, before Application, all will be useless, because the Poison returns no more to the Wound. But though external Remedies ought not to be neglected upon this Occasion, they are what bring but little Relief, in Comparison of those Things that may be

given inwardly; for the Venom of the *Viper* being very subtil, it passes instantly into the Blood, and therefore the Patient must take such Medicines as have Power to break the Points of the Acids, dissolve the Blood, and other coagulated Humours, excite or promote the Circulation, and push forward by Perspiration and Urine whatever Poison of the *Viper* may remain.

The volatile Salts of Animals are efficacious for these Intentions, because they are alkaline, very volatile, rarifying, sudorifick, and aperitive. That of *Vipers* is preferable to all others, because it is the most subtil; but instead of that, we may use the volatile Salt of *Harts-horn*, that of Urine, or human Skull. *Venice-Treacle* is very proper, if old, to relieve this Malady, because it is composed of Ingredients chiefly attenuating and rarifying; but when it is new we cannot use it with Success, because the *Opium*, which has not yet been rarified by Fermentation, will fix the Poison, and rather thicken the Humours, than rarify and discharge them.

The largest *Vipers*, and such as are well fed, ought to be chosen, and such as are caught in Spring-time or Autumn, when they are in the best Condition. The Trunk of the *Viper*, separated from the Skin and the Entrails, is administered against Poisons, to purify the Blood in the Small-Pox, intermitting and malignant Fevers, boiled in Broths, or taken in Powder, from eight Grains to two Scruples, or a Drachm. The Fat of the *Viper* is sudorifick, resolute, and anodyne, taken internally or externally; the Dose from one Drop to six. The Liver and Heart of the *Viper* being dried and powdered, are called *Bezoar-Animal*, and are reckoned the most powerful Part of the *Viper*. The Gall is sudorifick; the Dose being one or two Drops. The Word *Vipera* comes from *Vi*, Force, and *parere*, to bring forth; the Antients believed that the Female *Vipers*, in the Pleasure of Coition, eat off the Head of the Male; and that the young ones, to revenge the Death of the Father, ripped open the Belly of the Mother; but the Word *Vipera* seems rather to be derived from *viva*, alive, and *parere* to bring forth, which is as much as to say, the kind of Serpent that is brought forth alive, because all the other Kinds are produced from Eggs.

28. Of Treacle, commonly called Venice-Treacle.

Pomet. TREACLE is a Composition of certain choice Drugs, prepared, powdered, and reduced into an Opiat or liquid Electuary, with Honey. *Treacle* takes its Name

from the *Viper*, which the *Greeks* call *Therion*, or *Thyrion*; and it was compounded by *Andromachus* the Father, a Native of *Candia*, and first Physician to *Nero*. The *Venetians*, of late Years, have got the Reputation of being thought the only People who have the true Way of preparing the *Treacle*; but beside them at present the Apothecaries of *Montpellier* make such vast Quantities of it, that one may see Multitudes of their *Treacle* Barrels; and among them they have reduced it to so low a Price, that a Pound of good Honey will sell for more than the same Weight of this pretended *Treacle*. If I was to publish the Frauds that are committed in preparing this Antidote, I am satisfied the Magistrates would presently put a Stop to the Abuse, both as to that which is sold about at Markets and Fairs, as what is sold at *Paris* for sixteen or eighteen Pence a Pound. Though, notwithstanding it is sold at such a low Price, those who deal in it get considerably, because what they sell is nothing but the worst Honey, into which is incorporated a Parcel of rotten worm-eaten Roots and Drugs, that are no better than the Sweepings of Shops; to promote or recommend the Sale of this, they cover the Pots with a printed Paper, whereon are two *Vipers* that compose a Circle, crowned with a *Fleur-de-Lis*, which contains this Title, *Fine Venice Treacle*, though it is made at *Orleans* or *Paris*.

As to that of *Montpellier*, I have seen it often made there, with all the Exactness that can be; but what is sent to the Fairs for common Sale, they mix with large Quantities of boiled Honey, being obliged to sell it at about eighteen Pence a Pound; though that which is true stands them in above forty Pence a Pound. The *Treacle* Makers are called by the honest Apothecaries, to ridicule them, Mustard-Makers. As to the *Treacle* made at *Venice*, I can say nothing to it, not knowing directly how they make it; but as to what is made at *Paris*, by Messieurs *Charas*, *Geoffry*, *Jossin*, *Bolduc*, and *Rouviere*, I have seen it prepared with all the Care imaginable. And I can affirm, for a certain Truth, that there was a large Quantity thereof made in *March* 1688, without substituting any one Thing for another, and with the finest and best Drugs that were ever seen, being designed for a Master-Piece, or Trial of Skill; but as we are not immortal, and that those who sell this may be capable of knowing the true Composition, and of making it themselves aright, in order to prevent Abuses, I shall here give you the true Receipt; which I would not have done, if Mr. *Charas*, who has writ a particular Treatise of *Treacle*, had mentioned the Names of the Drugs in *French*: his Book is entitled, *The Natural History*

History of Animals, Plants, and Minerals, that make up the Composition of Andromachus's Treacle.

Andromachus's Treacle.

Take Troches of Squills, six Ounces; Troches of Vipers and Hedycroy, Long Pepper, Opium prepared, of each three Ounces; red Roses, Florentine Orrice, Juice of Liquorice, wild Navew Seed, Tops of *Scordium*, Balsam of *Judæa*, fine Cinnamon, and Troches of Agarick, of each one Ounce and an half; Myrrh, *Arabian Costus*, Saffron, *Cassia Lignea*, Indian Spikenard, Flowers of Camels Hay, *Olibanum* in Tears, White and Black Pepper, Dittany of *Crete*, Tops of white Horehound, fine Rhapontick, *Arabian Stæchas*, *Macedonian Parsley Seed*, Mountain Calamint, Turpentine of *Cyprus*, Cinquefoil-Root, Ginger, of each six Drachms; Poley Mountain, Ground Pine, *Storax* in the Tear, Spicknel, true *Anomum*, Valerian, Celtick Spikenard, sealed Earth, Germander, *Indian Leaf*, calcined Roman Vitriol, Gentian Root, Gum Arabick, Juice of *Hypocistis*, Fruit of the Balsam-Tree, Aniseed, Fennil-Seed, common *Cardamum*, *Marsilian Hartwort*, Treacle-Mustard, Flowers of St. John's Wort, Seeds of Bishop's Weed, Gum Sagapen in Tears, of each four Drachms; *Castor*, long Birthwort, Candy Carrots, *Jews Pitch*, Flowers of the lesser Centaury, *Opopanax*, and *Galbanum*, of each two Drachms; choice Honey three times the Weight of all; *Spanish Wine* as much as to give the due Consistence.

To make the Troches of Squills. Take Pulp of baked Squills, twelve Ounces; Flower of the bitter Vetch, six Ounces; beat them into a Mass, and form them into Troches. Troches of Vipers are made of the Flesh boiled in Water with Dill and Salt, and cleansed from the Bone, eight Ounces; Crumbs of Bread dried and sifted, two Ounces. According to Mr. Charas they are made up of Dittany Root instead of Bread Crumbs. For Troches of Hedycroy, take yellow Sanders, Herb-Mastick, Marjoram, *Asarabacca*, of each two Drachms; Camels Hay, *Calamus Aromaticus*, the great Valerian, Aloes Wood, true Balsam, Cinnamon, *Arabian Costus*, of each three Drachms; Myrrh, Saffron, *Indian Leaf*, Spikenard, *Cassia Lignea*, of each six Drachms; true *Anomum*, one Ounce and an half; Mastick in Tears, a Drachm; *Spanish Wine* enough to form into a Mass. The Way of making all these Troches is to be met with in most Dispensatories, especially those of Paris, Bauderon, Giban, and others.

The Grand Treacle reformed by Monsieur d'Aquin, the King's Physician.

Take dried Vipers, with the Hearts and Livers, twenty four Ounces; Troches of Squills, Extract of Opium, of each twelve Ounces; Roots of *Contrayerva*, *Virginia Snake Root*, *Angelica*, the great Valerian Spignel, Gentian, Birthwort, *Costus*, Indian and Celtick Spikenard, Cinnamon, Oil of Nutmegs by Expression, Saffron, Dittany of *Crete*, *Indian Leaf*, Water Germander, Mountain Calamint, Poley Mountain, Ground Pine, Flowers of St. John's Wort, and the lesser Centaury, *Arabian Stæchas*, *Anomum*, small Cardamums, *Macedonian Parsley-Seed*, Bishop's-Weed, *Marsilian Hartwort*, and Myrrh, of each eight Ounces; Refin of *Storax*, *Opopanax*, Gum Sagapen and *Castor*, of each four Ounces; a mellaginous Extract of Juniper-Berries, seventy-two Pounds; *Malmsey Wine*, one Quart.

This Prescription of Treacle has been better received than that of *Andromachus*, of later Years, by Reason of the vast Number of Ingredients, and the little Virtue that most of them have, which was the Reason why Mr. d'Aquin expunged what was superfluous, and added other Things more necessary; the Description of which Additions he gave to Mr. Charas to insert in his Royal Galenical *Pharmacopœia*. As to the Virtues of Treacle, I shall not insist on that Topick, because there are several Authors who have treated of them; besides the several printed Papers dispersed with it, that come from *Venice* or *Montpellier*, that explain the Use of it. In several *Dispensatories* we meet with a third Sort of Treacle, called the *Diateffaron*, because it is compounded of four Drugs, which are the Gentian, round Birthwort, Bay-Berries, and Myrrh, all reduced into Powder, and made up with Honey, and Extract of Juniper, into an Electuary. This Treacle, tho' of a small Price, is not wanting in good Qualities, being very useful for all Sorts of Cattle. Some People call it the *Poor's Treacle*, or *German Treacle*.

[And with the Addition of Ivory Shavings, in equal Quantity to the rest, it is what is commonly sold under the Name of *Diapente*; this is much used by the Farriers, who chuse to buy it in the Powder, not mixt into an Electuary.]

Along with this Medicine, we have brought from *Montpellier* a Treacle-Water, called so, because Treacle is the Basis of it, and by Reason its Virtues, in some Measure, are like it. The *Montpellier Treacle-Water* of Bauderon make thus; Take fine Treacle, three Ounces; Roots of *Tormentil*, *Angelica*, Vipers Grass, Dittany of *Crete*, and

and Sassafras, of each two Ounces ; Bole, one Ounce ; Juniper-Berries, Citron-Seeds, *Carduus Benedictus*, Sorrel, and Purslane-Seed, of each half an Ounce ; Betony, Marygold, Balm, Water Germander, Borrage, and Bugloss, of each one Handful ; fine Cinnamon and Mace, of each two Drachms ; Vinegar of Roses, made of White-Wine, two Pounds ; Juice of Citron and Verjuice, of each six Ounces : Chuse and prepare all your Drugs according to *Bauderon's Dispensatory* ; and from thence, by a Glass Alembick, you may draw a clear Water, of a strong Smell of Treacle, having the same Virtues with it : But the small Power there is in Vinegar, Juice of Citrons, and Verjuice, to dissolve and raise the Virtue of the Aromatics in Distillation, made the *Sieur de Pelerin* lay aside this Prescription, and follow that which *Mr. Charas* has given us in his *Dispensatory*, Page 1030, which will appear much more reasonable.

Mr. Charas's Treacle-Water.

Take Roots of *Gentian*, *Angelica*, *Master-wort*, *Valerian*, and *Contrayerva*, of each two Ounces ; Citron and Orange-Peel, not candied, but dry, fine Cinnamon, Cloves, and Juniper-Berries, of each one Ounce ; Water Germander, and *St. John's Wort* Flowers, of each one Handful : Spirit of Wine, Walnut and *Carduus* Water, of each one Quart ; fine Treacle, four Ounces ; you draw from thence a very odoriferous Water, more efficacious, and better to keep than the former. It is very proper to resist all Poisons, and prevent Infections. The Dose is from one Drachm to four, in a convenient Liquor. Likewise it is given sometimes alone, in a small Quantity. *Mr. Charas* says, that there is a Treacle-Water made, by dissolving of Treacle in equal Parts of Spirit of Wine, and Vinegar distilled. They also make Treacle-Vinegar sometimes only by dissolving it in strong Vinegar, which is used against the Infection of the Air, to wash the Hands, Temples, and Nostrils with.

When the *Roman Orvietan* was first known in *France*, we had it from *Rome*, and some other Parts of *Italy*, as *Orviette*, from whence it takes its Name ; but since that the *Sieur Contugi* came to *Paris*, and, under Pretence of the King's Permission, took upon him the whole Management of this Medicine, the Druggists have left off to trade in it, either thro' Fear, or because the Demand for it was not considerable. But they afterwards understood, that when the King gave his Authority to the *Sieur Contugi*, to sell and trade in *Orvietan* at *Paris*, he did not intend to ex-

clude the Druggists or Apothecaries at *Paris* from making it, as has been declared by an *Arrest*, lest he should deprive *France* of a Remedy so valuable and necessary to the Publick : As notwithstanding all the Care the *Sieur Contugi* could possibly take to make it in its greatest Perfection, he never could make it so good as that of *Italy*, because the Ingredients, which are very numerous, have not so great Virtues in *France* as in *Italy*, where the Heat of the Climate more exalts the Virtues of Simples than with us.

Orvietan.

Take Roots of Vipers Grass, *Carline* Thistle, *Master-wort*, *Angelica*, *Bistore*, *Birchwort*, *Contrayerva*, white Dittany, *Galingal*, *Gentian*, small *Arabian* Costus, true *Acorus*, *Macedonian* Parsley-Seed, Leaves of Sage, Rosemary, Goats Rue, *Carduus Benedictus*, Dittany of *Crete*, Bay and Juniper Berries, of each one Ounce ; Cinnamon and Cloves, of each half an Ounce ; dried Vipers with their Hearts and Livers ; old Treacle, of each four Ounces ; white despumated Honey, eight Pounds to make it into a Body. By consulting of *Bate's Pharmacopœia*, you may see how far this Recipe differs from that which he says *Sir Robert Talbot* communicated to him, and which we may suppose he brought from *France*.

Of Mithridate.

Take choice Myrrh, Saffron, white Agarick, Ginger, fine Cinnamon, *Indian* Spikenard, Frankincense, and *Thlaspi*, or Treacle Mustard-Seed, of each ten Drachms ; *Marsilian* Hartwort, Balsam of *Judea*, Camels Hay, *Arabian* Stœchas, Costus, Galbanum, Cyprus Turpentine, Long Pepper, Castor, Juice of *Hypocistis*, Storax in Tears, *Opepanax*, and *Indian* Leaves, of each one Ounce ; *Cassia Lignea*, Poley Mountain, White Pepper, Water Germander, wild Carrots, Fruit of the Balsam-Tree, Troches of *Cephi* and *Bdelium*, of each seven Drachms ; Celtick Spikenard, Gum Arabick, *Macedonian* Parsley, Opium, the lesser Cardamum, Fennel, *Gentian*, red Roses, and Dittany of *Crete*, of each five Drachms ; Aniseed, *Asarum*, the true *Acorus*, great *Valerian* Orrice, and Gum *Sapagenum*, of each three Drachms ; Spignel, *Acacia*, the Sea-Skink, and *St. John's Wort* Seed, of each two Drachms and an half ; Spanish Wine, a sufficient Quantity ; fine Honey, the Weight of all the Ingredients except the Wine ; and make all into an Electuary.

Of Troches of Cippi.

Take fat Raisins, *Cyprus* Turpentine, each three Ounces; choice Myrrh, Camels Hay, each an Ounce and half; fine Cinnamon, half an Ounce; *Calamus Aromaticus*, three Drachms; *Bdellium*, Spikenard, *Cassia Lignea*, *Cyperus*, Juniper-Berries, Aloes Wood, each two Drachms and a half; Saffron, a Drachm; fine Honey, *Spanish* Wine, enough to make them into Troches. The Way of compounding Mithridate differs nothing from that of Treacle; and as to these Troches, the *Dispensatories* of *Bauderon* and *Charas* shew us the Manner of preparing them.

[In regard to all these Compositions, as they have properly no Business in a Work of this Nature, I shall not add to the Length of this Chapter, by saying any thing farther about them, especially as we have now a new *Dispensatory*, in which they are all very greatly reformed and amended]

29. Of the Sea-Skink.

Pomet. THE *Sea-Skink* is an amphibious Animal, pretty much like a small Lizard. It is about half a Foot long, and an Inch in Diameter, having a sharp Nose, covered with Scales. It has two little piercing Eyes, and a Mouth divided to the Place where the Ears should be seated, had this Creature any. It has a great many little white and red Teeth, and goes upon four Feet, little more than an Inch high, which are very like those of an Ape. Its Body is covered with little round Scales, different from those of the Head, which are long and large. They are greyish, inclining to brown upon the Back, and of a Silver grey under the Belly. The Body of this Animal grows still smaller to the End of the Tail, like the Viper's.

There are a great many of these little *Skinks* to be found in the *Nile* in *Egypt*, from whence they are brought us by the Way of *Marseilles*, only the Entrails are taken out, and the small End of the Tail is cut off. Chuse such as are the biggest, longest, heaviest, most dry and entire, and least worm-eaten, to which they are very subject. They are reckoned proper to restore Warmth in old Age, and Decays of Nature, to encrease the *Semen Virile*, and are one of the Ingredients of *Mithridate*.

The Reverend Father *Du Tertre* says, that he saw not only in *Guadalupe*, but likewise in other of the *American* Isles, the true *Skinks*, altogether like those brought from *Egypt*. They are, he says, a sort of *Lizard*, by the Inhabitants of *Guadalupe*

called *Mabuia*, and in some other Isles, the *Land Pike*. These *Skinks* are more fleshy than other Lizards, the Tail is thicker, and the Legs and Feet are so short, that they creep upon the Ground. Their Skins are covered with an infinite Number of little Scales, like those of Snakes, but of a yellow Colour, silvered, and shining, as if rubbed with Oil. Their Flesh is good against Poison, and the Wounds of envenomed Arrows.

Scincus Marinus, or the *Skink*, is a little *Lemery*. amphibious Animal, resembling a small Lizard, or rather a little *Crocodile*, as long as one's Hand, sometimes thicker than an Inch, covered with little Scales of a Silver Colour, especially under the Belly, having brown Streaks cross the Back; the Head is oblong, and thicker over the Jaws than the Neck; the Eyes very little; the Nose sharper than that of the *Lizard*, covered with Scales as the rest of the Body is; the Mouth is cut in very deep, set with a great many little white Teeth. Some Authors call it *Crocodilus Minor*, or the little *Crocodile*. It is bred in the *Nile*, and several other Parts of *Egypt*, and feeds upon aromatical Flowers. It never grows bigger than as we have it brought to us. They open the Belly and take out the Entrails, then fill it with Poley, or some other dried aromatical Herbs, in order to preserve it. This Creature affords a great deal of volatile Salt and Oil. Some People prefer the Kidneys before the rest of the Body; but there is no Difference in the Virtue of any of them.

[The *Skink* is the *Scincus*, seu *Crocodilus Terrestris*, *Raii Syn. Anim.* 271. *Scincus quem et Crocodilum Terrestrum vocant.* *Gesn. De Quad. Eryp.* 24. *Scincus Marinus.* *Mont. Ex.* 6.]

It is brought to us dried from *Egypt*, but is never used except as an Ingredient in some official Compositions.]

26. Of Silk-worms.

THE *Silk-worms* are little Insects, *Pomet.* whose Origin is altogether surprising, as well as the various Shapes and Changes they undergo. Several Authors have writ of them; and amongst the rest Mr. *Isnard*, in a little Treatise of his, at the 254th Page, gives this Account of their Original. "At the Time when the Mulberry-
" Leaves are ready to gather, which should be five
" Days after their Budding, in the Beginning of
" the Spring, they take a Cow, which is almost at
" Calving, and feed her wholly with Mulberry-
" Leaves, without giving her any Thing else to
" eat of Herbs, Hay, or the like, till she has
" calved; and this they continue for eight Days
" longer;

“ longer ; after which they let the Cow and Calf
 “ both feed upon this some Days together, with-
 “ out any other Mixture, as before : They kill
 “ the Calf after it has been filled or satiated with
 “ the Mulberry-Leaves and the Cow’s Milk ; then
 “ chop it to Pieces to the very Feet, and with-
 “ out throwing any thing away, put all together,
 “ the Flesh, Blood, Bones, Skin, and Guts, into
 “ a wooden Trough, and set it a-top of the
 “ House in a Granary, or Garret, till it is cor-
 “ rupted ; and from this will proceed little Worms,
 “ which they lay in Mulberry-Leaves, to raise
 “ them afterwards, just as they do those which
 “ are produced from the Eggs ; and these Silk-
 “ worms are abundantly more fruitful than those
 “ from the Eggs ; so that those who deal confi-
 “ derably in them, never fail every ten or twelve
 “ Years to raise them this Way.”

There are so many Particulars relating to the Management and Breeding of these little Creatures, that it would be troublesome to dwell upon this Subject ; besides, it has no relation to my present Purpose ; and since Mr. *Isnard* has writ an entire Book upon it, I shall refer those to it who would know further. These little Animals supply us with a Commodity so valuable, that formerly those only of the best Quality were clothed with it. There are several Colours of Silk ; as white, yellow, and the like : These different Silks are found in little Balls of the Size and Shape of a Pigeon’s Egg ; and by the means of warm Water, and certain *Windles*, they wind them into Skains, and then dye them of what Colour they please.

I shall not detain you with a Description of all the different Silks that we have brought us from several Parts, contenting myself only to say, that what is used in Physick is the Natural ; that is to say, the *Ball*, or what is wound up naturally, and without passing thro’ hot Water, to which the Antients gave the Name of Raw-Silk ; or rough as it comes from the *Silk-worm*. This Silk, after it is reduced to Powder, which is not very easy to do, is brought into several Compositions, as Confections of *Alkermes*, *Elyacinth*, &c. They use likewise Silk dyed scarlet, to give to Women in Child-bed, instead of *Alkermes*. Several Authors say, that Silk has the Virtue of making the Heart pleasant, and the Spirits brisk, and to cleanse the Blood. Those who use the Balls of Silk ought to take care, before they reduce it into Powder, to cut it asunder, and take away the Worm that is within, sometimes fresh, and sometimes rotten, with the first Skin that wraps it about, as not fit to be taken inwardly ; and those who would have the best, use nothing except the Silk that is wound off, because the rest is nothing but Dross, or Refuse Stuff. It

may be reduced to Powder, by cutting it very fine, so that it will pass thro’ a Sieve ; for to beat it, will be a tedious Work ; besides it will lose half. As to the Confections of *Alkermes* and *Hyalacinth*, the scarlet Silk ought to be preferred to all other, tho’ almost all Authors recommend the Raw-Silk, which is that which is white, or of a Gold Colour, and which has not been dyed.

There are several other Reptiles which we sell, as the Leeches which are found in Ponds and Ditches, and which the Surgeons apply to several Parts of the Body, and chiefly those where Cupping-Glasses cannot be easily fixed. There are several Sorts of Leeches ; the best of which are the smaller kind, which have small Heads, reddish Bellies, with Streaks upon the Back, that are of a Gold Colour. They are to be met with in clear running Water. Throw away the venomous Sort, which have thick Heads, and are of a green Colour, that shine like Glow-worms, and are streaked with blue, and found in muddy Waters ; for instead of relieving the Patient, they will cause Inflammations, Aposthumes, Fevers, and malignant Ulcers that are sometimes incurable. To keep these Leeches, put them into clean Water, that must be renewed from Time to Time, to which some will add Sand and Earth.

We sell, besides these, the Powder, volatile Salt, and Oil of Toads, as well as the Stone that is found in the Head of the large and old ones, to which the Antients attributed great Virtues ; and Mr. *Charas* treats of it very largely, in his *Chymical Dispensatory*, Page 794 ; to which those who desire to know further may have Recourse. There are some who rank the Toad-Stone among the precious Stones, not only because it is scarce to be met with, but because it is endowed with so many excellent Virtues, being proper to resist all Sorts of Poison. The white is the most valued, tho’ those which are of another Colour, are endowed with no less Virtues : They frequently impose upon the Buyer, instead of the Toad-Stone, a little round or longish Stone, that is found in several Parts of *Europe*.

We sell likewise volatile Salt, Oil, and Powder of *Millepedes*, or Hog-Lice, to which Mr. *Charas* assigns great Virtues. The Powder is given with Success in Nephritick Cholicks, Retentions of Urine, the Jaundice, Diseases of the Eyes, and all Obstructions. Mr. *Charas* attributes also great Virtues to the volatile Salt of *Cantharides*, Earth-Worms, and Ants ; as may be seen in his *Chymical Pharmacopæia*. We sell likewise the Oils of *Scorpions*, simple and compound, which we have ready made from *Provence* and *Languedoc*, and for which we have a better Price than for those made

made by the Apothecaries at *Paris*; and which, without Dispute, are much better, because the *Scorpions* are most frequent in those Provinces. And the other Ingredients have also more Virtue there, from the Warmth of the Climate. The first or simple Oil of *Scorpions* is only made of *Scorpions* and Oil of bitter *Almonds*: The Compound is that of *Matthiolus*, which is made of the following Drugs, viz. of *Scorpions*, old Oil Olive, the Flowers, Leaves, and Seed of *St. John's Wort*, *Germander*, *Mountain Calamint*, *Cardus Benedictus*, *Water Germander*, lesser *Centaury*, *Vervain*, *Dittany of Crete*, *Zedoary*, *White Dittany*, *Gentian*, *Tormentil*, round *Birch-wort*, *Storax*, *Benjamin*, *Juniper-Berries*, *Nigella Seed*, fine *Cinnamon*, *Calamus Aromaticus*, long *Cyperus*, white *Sanders*, *Rhubarb*, *Myrrh*, *Aloes*, *Indian Nard*, *Saffron*, *Treacle*, *Mithridate*, and *White Wine*; the Quantities of these Ingredients you will find in *Matthiolus's* sixth Book of Poisons; or in *Bauderon*, or *Charas's Dispensatory*, whereto those who desire to make it may have Recourse. This Oil is one of the most difficult Compositions in Pharmacy, because of the different Mixtures, and the Difficulty of getting the *Scorpions* alive from *Provence* or *Languedoc*.

Bombyx, sive Vermis lanificius, the *Lemery. Silk-worm*, is a Kind of Caterpillar, or a Worm as long and thick as one's little Finger, divided from one Part to another in a Sort of Rings; having under them usually fourteen Feet, six in the fore Part, which are very small, and eight on the hinder Part, which begin after the third Ring: The two last are much larger than the rest; the Shape of them is ugly to look upon; their Substance very moist and viscous. They are clothed with a very thin tender Skin, easy to break, and of a brown or whitish Colour, with some Spots. The *Silk-worm* is produced in the Spring, from a little round Egg, that is like a Poppy-Seed; is fed with *Mulberry-Leaves* fresh gathered; for if they are decayed, they kill the *Silk-worms*. When they are grown to their full Size they eat no longer, but spue out of their Mouths a kind of thick, gluey, or viscous Slaver or Foam, which they stretch, extend, and work to a Silk Web, and then wind into a *Clue*, that is sometimes white, and sometimes yellowish, and in this the Animal is wrapped, and lies several Days, still working till it dies; but if you do not in time throw this *Clue* into Water to draw off the Silk, it will quit this thick Clothing, pierce thro' the *Clue*, and arise a fine, white, gaudy, active Butterfly; and if you leave after this Manner a Number of them, you will have a diverting Sight, to see the Male and Female Butterflies

caressing, and making Love; from whence, afterwards, you have Eggs.

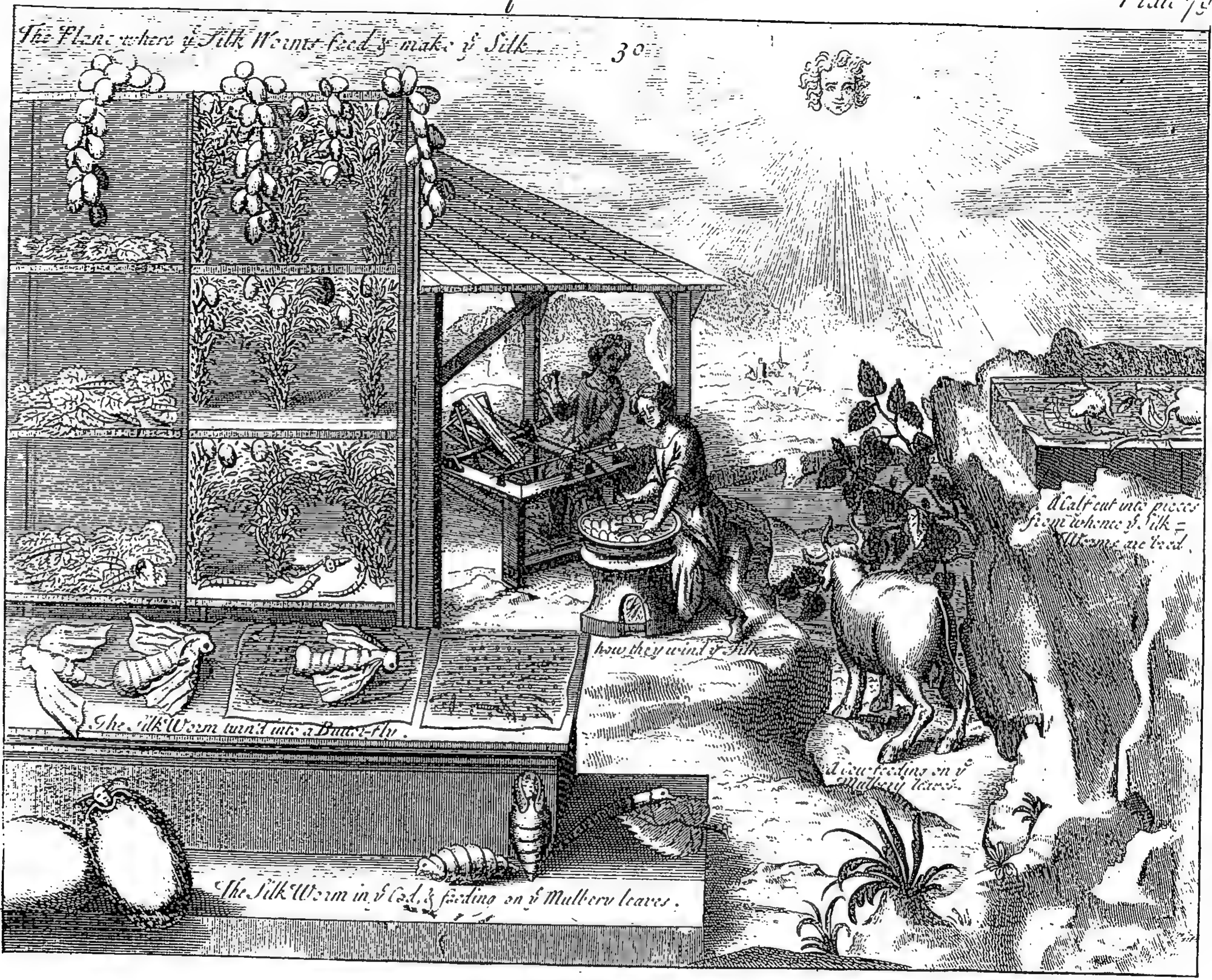
The *Silkworms* yield Abundance of Flegm and Oil, but little volatile Salt. They are reckoned very good to cure a *Vertigo*, if after they are dried and powdered you apply the Powder upon the Head, being first shaved. The Silk upon the *Clue*, before it is cast into the Water, is called *Sericum crudum*, or Raw-Silk. It ought to be cut asunder to uncover the Worm within it. This yields a little Flegm, a good deal of Oil, but very little volatile Salt and Earth. It is thought proper to recruit the Spirits, and purify the Blood, being taken in Powder. Some People hold, that if you feed a Calf with *Mulberry Leaves*, then kill and cut it to Pieces, and expose it to the Air, upon a House, it will produce *Silk-worms*; but this Thought wants Confirmation. In the Parts where they trade in Silk, as *Savoy*, *Languedoc*, and *Provence*, they put their *Silk-worms* in Chambers, where they are disposed in Repositories or Niches, where they make their *Clues*; good Quantities of which they preserve on purpose to have Eggs, and they throw the rest into warm Water, wherein the Worms die.

[The *Silk-worm* is the *Bombyx*, *Aldrov. De Ins.* 278. *Jonsf. De Insect.* 114. Its Origin is from the Eggs of a Female Butterfly, as all the other Caterpillars have theirs. Mr. *Isnard's* Account of their Production, is much such another Story, as *Virgil's* of the Bees, for unless the *Silk-worm Butterfly* would lay its Eggs in putrified Flesh, which it is most certain she never does, it is altogether impossible young *Silk-worms* should ever be found there. The Raw-Silk was once in esteem as a Cordial and Sudorifick, but at present is never heard of in the Shops.

The Toad is the *Bufo*, *Jonsf. De Quad.* 131. *Bufo sive Rubeta*, *Raii Syn. An.* 252. *Rana Rubeta tum Palustris tum Terrestris*, *Gesn. De Quad.* 54. The dried Toad is a good Medicine in Dropsies, being a powerful Diuretick taken in Powder from two Scruples to a Drachm.

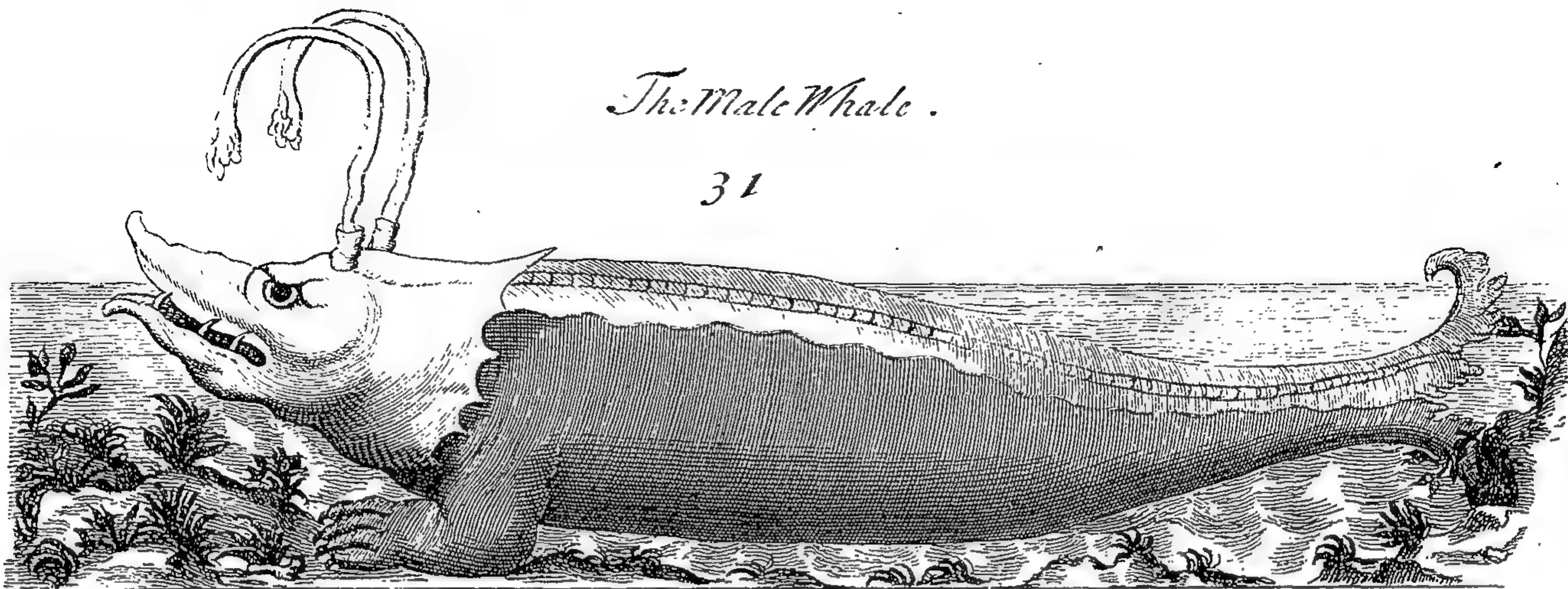
What is commonly called the Toad-Stone, and generally believed to be taken out of the Head of the Toad, is a small Substance of various Colours, sometimes brown, sometimes black, sometimes greenish, and sometimes of a dusky green and whitish-brown marble together, concave on one Side, and convex on the other.

These Stones, as they are called, are not taken out of the Toads Head, but are the *Dentes Molares* of the Sea Wolf, the *Lupus Marinus Schonfeldii*. *Jonsf. Tab.* 47. *Lupus Marinus nostras et Schonfeldii. Raii Ichth.* 130. They have been formerly supposed good in pestilential Diseases, and Antidotes against

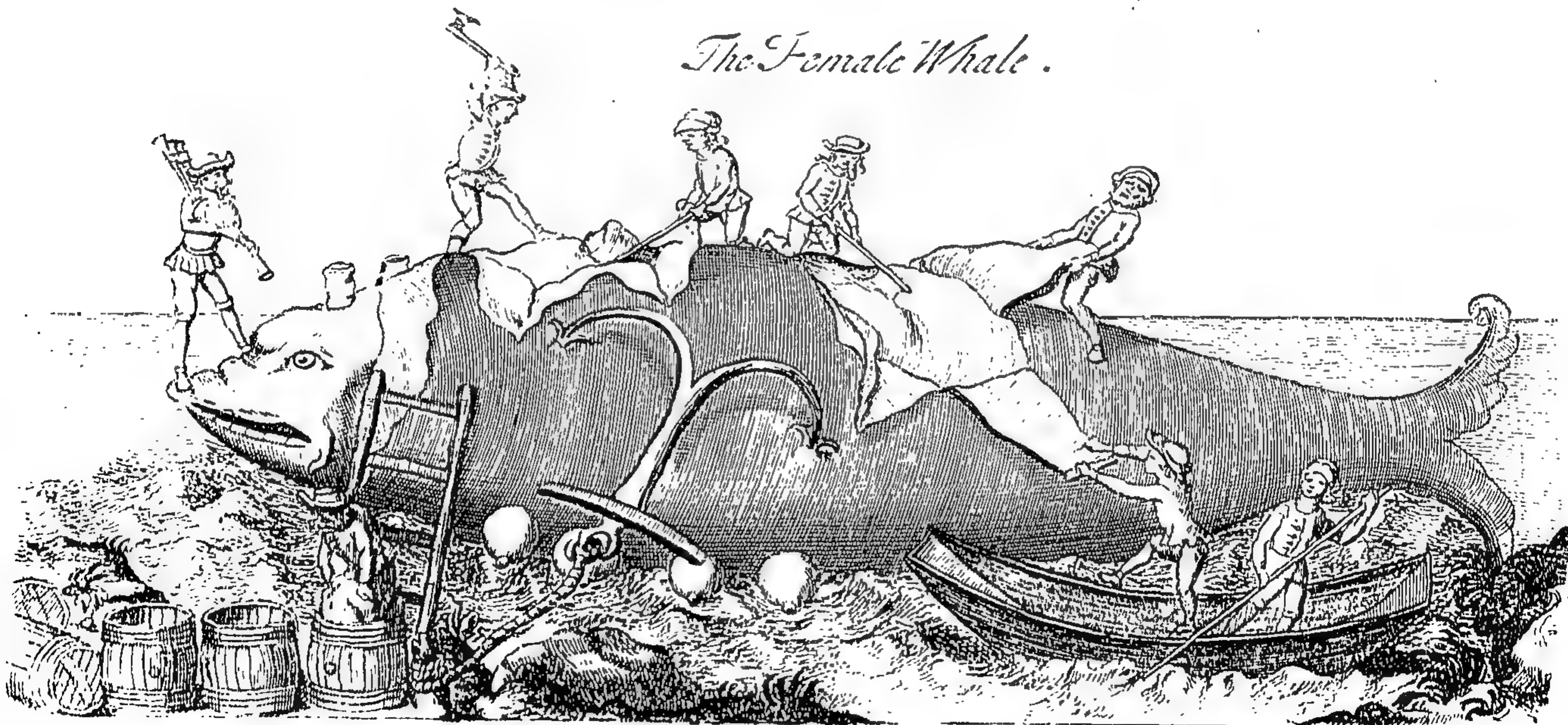


The Male Whale .

31



The Female Whale .



against all Kinds of Poisons, but are wholly neglected in the present Practice.

Millepedes are the *Aselli Millepedes et Onisci* of the Shops, the *Asellus lividus major*. *Raii Hist. Inf.* 42. *Onixus sive Asellus*. *Aldrov. de Inf.* 632. Of these there are many Preparations, but the best Way of taking them is certainly the swallowing them alive, and the next to that their Expression made with Wine.

The Scorpion is the *Scorpio*, *Fons. de Inf.* 95. *Scorpius*, *Raii Hist. Inf.* 9. It is an Animal something resembling a Crab, but smaller, it has eight Legs, and is of a black or dusky brown Colour, the Oil is much in Esteem as a Remedy against the Creatures Poison, which it may indeed easily be, by its own Virtues, whether it receive any thing from the Scorpion or not. The Ashes of them, when burnt, are also commended in the Stone and Gravel, but seldom used.]

31. Of the Whale.

Pomet. **T**HE *Whale* is the largest of all Fish, it is found in the Northern and North-West Seas. The *Skeleton* of one was shewn at *Paris* 1658, whose Skull was between sixteen and seventeen Feet long, weighing four thousand six hundred Pounds; the Jaws ten Feet wide, and fourteen Feet long, weighing each eleven hundred Pounds. The Fins, which looked like Hands, twelve Feet long, and weighing each six hundred Pounds. The Ribs twelve Feet and a half long, each weighing fourscore Pounds. The Joints of the Back, from the Head to the End of the Tail, forty five Feet long; the first Joints weighing fifty Pounds each, and the others less, according as they come nearer the End. I shall not trouble myself to give an Account of all that relates to this Animal, or the Manner of taking it, because several Authors have treated of it; but I shall only say, that there are two Sorts of Whales; the one is called *Cachalot*, which differs from that which is called the *Whale*, in that the Mouth of the *Cachalot* is furnished with little flat Teeth, without a Beard or Whiskers, which is contrary to that which commonly bears the Name of the *Whale*, which has nothing but Whiskers. These Whiskers are what we call *Whale-bone*. It is from the Fat of these Animals, that they draw *Whale Oil*, which is a very great Commodity, especially in Times of Peace, by reason of the great Use they have for it in *France*, as well for Burning, as several other Uses, wherein it is very necessary. We have two Sorts of Whale Oil come to *Paris*, the best of which is, that which we call Oil of the Great Bay, which is by the *French* made of the Fat immedi-

ately after it is taken from the *Whale*; whence it comes that the *French* Oils do not smell so ill as those made in *Holland*, because the *Dutch* do not make their Oils from the Fat so soon as it is drawn from the *Whale*, but bring it into *Holland* to be melted; wherefore we ought to prefer the *French* Oils to those of *Holland*, which are easily known, because the *Dutch* are red and stinking, and yet are clear. The great Quantities we have of *Whale* Oil, come from the Northern Sea, especially *Greenland*, from whence the *Hollanders* are supplied, because the greatest Number of *Whales* are found there.]

Of *Sperma Ceti*.

The *Sperma Ceti*, according both to the Antients and Moderns, and which, tho' improperly, is called so at this Day, is the Brain of a Sort of Whale called by the *Biscayians* *Byaris*, and by the People of *St. John de Luz*, *Cachalot*. This Animal is named by some, the Male Whale, and in *Latin*, *Orca*; it is about twenty five Feet long, and twelve Feet high; each of the Teeth weigh a Pound, and are very useful for several Sorts of Works: These Creatures are very common at *Cape Finisterre*, on the Coast of *Galicia*, and in *Norway*. In the Year 1688, there was one taken by a *Spanish* Ship, that carried it to *St. Sebastian's*, from the Head of which were taken twenty four Barrels of Brain, and from the Body ninety six Barrels of Fat: They ought to be undeceived who believe that *Sperma Ceti* is any thing else but the Brain of the *Cachalot*; and I can affirm this with Certainty, not only having seen this prepared, but having prepared it myself, in the following Manner.

This *Sperma Ceti* is usually prepared at *Bayonne*, and *St. John De Luz*; and this Work is so rare in *France*, that there are but a few Persons at the latter Place, who know how to prepare it. Those who perform this, take the Brain, and melt it over a gentle Fire; then they cast it into Moulds like those wherein they refine Sugar; and after it is cooled and drained from the Oil, they melt it again, and proceed after the same Manner, till it is well purified and very white; then, with a Knife made for the Purpose, they cut it into Scales or Flakes, just so as it appears when brought to us. As this Commodity is of some Consequence, by Reason of its Price, I must tell you, you ought to chuse such as is in fine white Flakes or Scales, that are clear and transparent, of the true natural Smell; and take Care that it be not augmented with white Wax, as it happens but too often, which is easy to distinguish, as well from the Smell of the Wax, as because it is very thin, and of a more unpolished white.

white. Likewise carefully observe, that it be what is made of the Brain of the Whale, because that which is made of the Fat, is very apt to turn yellow, and this is the Reason we sometimes meet with *Sperma Ceti* that immediately turns yellow on being exposed to the Air; we have no Commodity which is so sensible of the Air as this, which is the Reason why it ought to be carefully kept in Glasses, or in Barrels, close stopped from the Entrance of any Air, lest this Drug turn yellow. It dissolves easily in unctuous Liquors, and is therefore a common Ingredient in Pomatums, and other such Compositions. Women in Child-bed take of it, to a Spoonful, to remove After-pains, and assist their Cleansings; and it is an excellent Remedy in Bruises, Inflammations, Pleurifies; or the like, taken with Syrup of Violets, Oil of sweet Almonds, &c.

Balæna, sive Ceta, sive Cetus, or the *Lemery. Whale*, is a vast Fish bred in the Northern Seas, whereof there are many Kinds. From the Flesh of this they make the *Whale* or *Train Oil*; and from the Brain of a Sort of Male Whale, which they call the *Orca, Byaris, or Cachalot*, is made what we call *Sperma Ceti*. The Fish is common along the Coast of *Galicia* in *Spain*. When the Brain is separated from the Head, they melt it with a gentle Fire, and cast it into Moulds to cool; then they separate the Oil, and so repeat the Work till the Matter is clear and white; after which they divide it into Scales or Flakes for Sale. This was called *Sperma Ceti*, because the Antients believed that it was the Sperm of the Whale that floated on the Sea. Several Moderns have rejected this Opinion, but would establish another which is as foreign from the Truth as the former. They say that the *Sperma Ceti* is a *Sea Biumen*, or a kind of Sea Froth, that is driven by the Waves to and fro. It is astonishing that the Origin of this has been a Secret so long; for it is not above two and twenty Years, since it was known that this was drawn from the Head of the Whale. The *Sperma Ceti* is resolute and mollifying. They use it in Pomatums to soften and smooth the Skin; in Ointments or Liniments, to dissolve the Hardness of the Breasts: In Injections of the Womb, to soften the same; and it is given inwardly, to correct the Acrimony of Humours in the Breast or Belly. The Dose from half a Scruple to two Scruples.

[The common Whale from which we have the *Train Oil*, and Whale-bone, is the *Balæna vulgaris*. *Ald. de Pisc.* 683. *Balæna vulgaris edentula dorso non pinnato*. *Raii Syn. Pisc.* 6. *Balæna major laminas in superiore maxilla habens bipennis, Fistula carens*. *Sib. Phal.* 27. *Balæna vulgo*

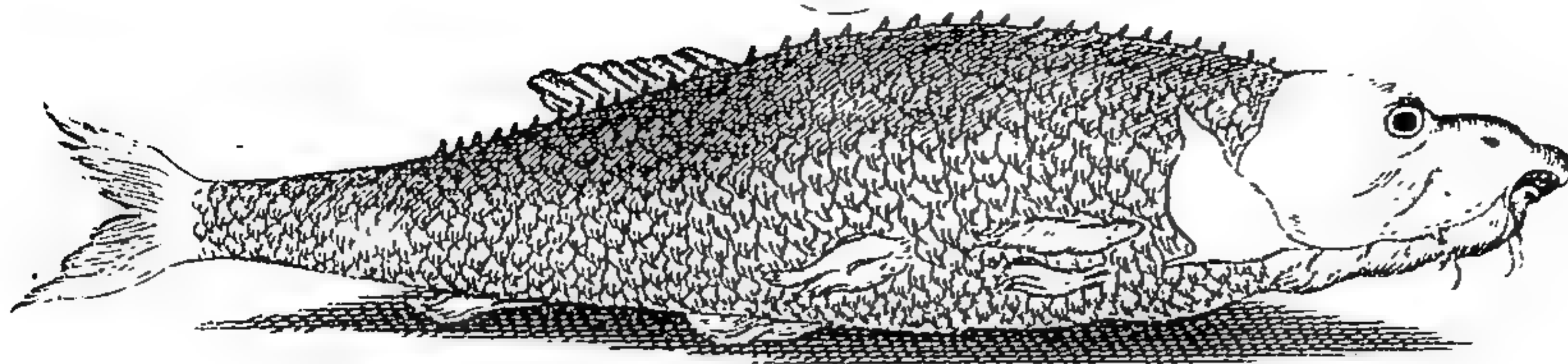
dicta, sive Mysticetus Aristotelis Musculus, Plinii, Gesn. de Aquat. 114. It is common in the Northern Seas. The *Train Oil* is made from its Fat, and the Whale-bone, as it is called, is found in its Mouth in *Laminæ* of a horny Substance.

The *Sperma Ceti Whale* is the *Balæna macrocephala quæ binas tantum pinnas laterales habet*. *Sib. Phal.* 12. *Balæna major inferiore tantum maxilla dentata macrocephala bipennis*. *Raii Syn. Pisc.* 15. It is principally caught in the *Greenland* and *Iceland* Seas. What we call *Sperma Ceti* used to be prepared from a natural fat Substance, found in the Ventricles of the Brain, the Diploe of the *Cranium* and circumjacent Parts of this Fish; sometimes by simple Meltings as described by our Author, and sometimes by boiling in a strong *Lixivium*, till all the Humidity being evaporated, a white solid Matter, like Soap, remained; this being cleansed from the coarse Oil, and Salts of the *Lixivium*, by repeated Meltings and Washings, they divided with Knives, into *Laminæ*, as we see it. But of late, they have found a Way of making it out of any sort of Oil.]

32. Of the Fish-Glue, or Isinglass.

THAT which we call *Fish-Glue*, or *Isinglass*, the *Latins*, *Gluten Alkanac*, the *Greek*, *Ichthyocolla*, and the *Arabs*, *Alcana*, is the mucilaginous Part of a Fish, whose Back is full of little white Scales that are prickly and ranged in Order, commonly found in the *Muscovy* Seas; which is the Reason that almost all the *Isinglass* we have from *Holland*, is brought thither from *Archangel*, where is kept a famous yearly Fair. Several who have writ of this Fish whereof they make the *Isinglass*, and among others, *Rondelet*, have said that it has no Bone, which is the Reason why it is called the Fish without Bones. They have pretended also, that it has no Prickles, which is very wide of the Truth, because the Back of it is so well furnished with them, that there is not any Fish, how strong soever, will dare to bite it; the Scales, though they are small, are very sharp, as represented in the Cut, which I had engraved from the Original which I have in my Hands. The Antients imagined, that it was of the cetaceous Kind, that is to say, that it resembled in Nature and Bulk, the Whale or Dolphin, because the Head is very thick, heavy, and large, the Mouth very long and open, and that there grows to the Upper Jaw a certain long Excrecence, hanging down like a Beard. As to the Flesh, it is sweet and gluey, and consequently of little Relish, if it be not salted some Time before it is eat.

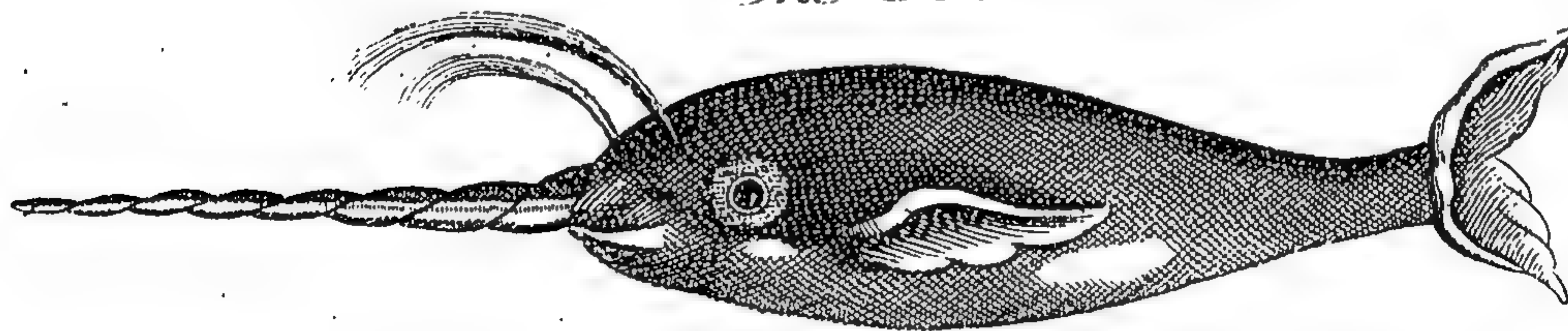
of Animals
32
The Sing-glass Fish



The Silurus.



The Sea Unicorn



As to the Manner of making the *Isinglass*, the finewy Parts of the Fish are boiled in Water, till all of them be dissolved that will dissolve; then the gluey Liquor is strained, and set to cool. Being cold, the Fat is carefully taken off, and the Liquor itself is boiled to a just Consistency, then cut into Pieces, and made into a Twist, bent in Form of a Crescent, as commonly sold, then hung upon a String, and carefully dried. That which is clearest and whitest is best; and which being boiled in Water and Milk, will almost all dissolve. It is chiefly made in *Muscovy*; and that which is called the Patriarch Sort, which is four square, very thin and white, almost transparent, is the choicest; the next is the *Czar's* Sort, which is the large Horse-shoe, or twisted Kind, that is in thin Rags, and clear; a meaner Sort is that which is yellow and brown within; and that in square Books or Cakes, is the worst of all.

The Use of *Isinglass* is very common in *France*, but not in *Physick*; for I believe, besides what is used in making the *Diachylon* Plaister, that all the Apothecaries in *Paris* scarce use a Pound in the Year: But it serves the Wine-Merchants and Vintners, who use it to fine their Wines, for which formerly they were blamed, though without Reason. For it is a very great Error that has been received, that *Isinglass* was a poisonous Drug, when nothing is so certain as that it has no ill Quality whatsoever; but the Fish from whence it is made is one of the principal Foods of *Muscovy*, the Jelly being very wholesome; the Flesh of the Back of this Fish tastes like Veal, and is very nourishing; the Belly eats like Pork, being very sweet and good. *Isinglass* is of a healing and strengthening Property; used in Broth and Jellies, it strengthens the Back, stops a Dysentery and continued Purging. It is good in *Gonorrhœa's*, and the *Fluor albus*. Being of an alcalious Nature, it affords Acids, and eases the most inveterate Pains of the Stomach. The necessary Uses to which this is put, are in several Sorts of Silk Works, to give a Lustre to Ribbons and other Silks, and to whiten Gauzes. It is a principal Ingredient in the counterfeit Oriental Pearl. We have from *England*, *Holland*, and other Parts, a sort of *Isinglass* folded in little Books, that is of small Use in *France*, because it is very hard to dissolve, and never white. Some Persons have assured me, that it was made of the Remainder of that which is made in little Wreaths; and others will have it, that it comes from the mucilaginous Parts of a Fish some Authors call *Silurus*, or *Sturio*, the *Sturgeon*, which it a very scarce Fish in *France*. It is sometimes to be met with in our Rivers; but because of its Rarity, and its being excellent Meat, those

who find them sell them for three or four Hundred Livres.

Ichthyocolla, *Isinglass*, or *Fish-Glue*, is a Paste or Glue made of the Skin, *Lemery*. Fins, Tail, Entrails, Sinews, and other mucilaginous Parts of a great Sea-Fish, called *Huso*, or *Exoffis*, from being without Bones, that is twenty-four Feet long, and weighs four Hundred Weight. It is usually met with in the Seas about *Muscovy*, in *Hungary*, and other Parts of the *Danube*. They make the *Isinglass* by cutting all these Parts of the Fish in Pieces, which they steep in hot Water, and then let it boil over a gentle Fire till it is dissolved, and reduced into a Jelly. They spread this upon Instruments made for the Purpose, that it may dry, and be made into a Kind of Parchment. When it is almost dry, they usually roll it up into Wreaths of different Shapes and Sizes. The *Dutch* furnish us with almost all we use.

[The *Isinglass* Fish is the *Ichthyocolla*. *Rond. De Pisc.* 2. 177. *Raii Ichthyogr.* 244. *Huso Ichthyocolla*. *Schrod.* 5 329. It is caught in the *Danube*, *Volga*, and other great Rivers; but it is to be observed, that *Isinglass* is not made from this Fish only, great Quantities of it being also boiled from the *Huso Germanorum*; a Fish very different from this, though generally confounded with it. The *Isinglass* is unquestionably the best, as well as most safe, and innocent thing used in purifying Wines; and in Medicine it is admirable in all Disorders that arise from too thin and sharp a State of the Fluids.]

33. Of the Narwal, or Sea Unicorn.

THE *Narwal*, so called by the *Islanders*, and by some others, *Rhoar*, by us the *Sea Unicorn*, is a large Fish, which some reckon to be a Sort of Whale; it is found plentifully in the Northern Seas, especially along the Coast of *Iceland* and *Greenland*. This Sea-Monster carries at the End of his Nose a white weighty Horn, that is smooth, and of a spiral Figure. It is of different Sizes and Weight, as may be seen in the Cabinets of the Curious; as that of Mr. *Morin*, Physician to the late *Mademoiselle de Guise*, which I have seen and handled, and which is represented in the Figure. And Mr. *Charas* told me, he had one longer and thicker than that in the Treasury of *St. Denis*. They are the Pieces of this Horn, that we sell at *Paris*, as they do elsewhere, for the true Unicorn's Horn, to which some People assign large Virtues, which I shall neither authorize nor contradict, having never had sufficient Experience of it.

There is another Fish besides, that they give the Name of the *Sea Unicorn* to, which is met with in different Parts of the World. Mr. *Dumantel* says he saw a prodigious one, in an Isle near *St. Domingo*, in the Year 1644. This *Unicorn*, says he, pursued a smaller Fish with that Violence, that he threw himself out of the Depth of Water necessary to swim in, and ran himself upon a great Bed of Sand, where half of his Body being uncovered, he could not recover himself to get into the Deep again, and by that means the Inhabitants of the Island took him. This Fish was about eighteen Foot long, and of the Thickness of an Hoghead. About the Middle he had six great Fins, that at the Ends were like Oars; two of them were placed instead of Ears, and the other four along the Belly, at equal Distance, being of a Vermillion Colour; and all the Body was covered with large Scales, as big as a Crown Piece, which were of a Blue, that appeared to be spangled with Silver. Near the Neck the Scales were brownish, more compact and close, and made a sort of Collar; the Scales under the Belly were yellow: The Tail was forked, the Head a little thicker than that of a Horse, and almost of the same Shape; it was covered with a hard brown Skin. And as the *Unicorn* has a Horn on the Forehead, this *Sea Unicorn* has one perfectly fine, nine Feet and an half long, that stands directly on his. It is exactly straight, and grows taper from the Front of the Head, or Basis of the Horn, to the Tip, where it is so sharp, that with Force it will drive through the hardest Body. The thick End was about sixteen Inches Circumference; and from hence to about two thirds of this wonderful Horn, it was fashioned like the Screw of a Press, or rather waved in Form of a twisted Column, saving that the Furrows were still lessened until they became altogether smooth about four Feet two Inches from its Original. The Bottom was covered with an ash-coloured Skin, that had on it a little short Hair as soft as Velvet, of a Fillemot Colour, but underneath was as white as Ivory. As to the other Part that appeared altogether bare, it was naturally smooth, and of a shining black, marked with some fine white and yellow Streaks, and so hard, that a good File could scarcely touch it. The Creature had no Ears erected, but two great Gills, as other Fish; the Eyes being of the Size of an Hen's Egg. The Apple of the Eye was of a Sky-blue, enamelled with Yellow, and surrounded with a Vermillion Circle, that was succeeded by another very clear one, that shone like Crystal. The Mouth, like that of the Horse, was cleft and set with several Teeth; those before being sharp; and the others in the Jaws behind.

large, and raised with little Bunches. The Tongue was of a proportionable Length and Thickness, which was covered with a rough red Skin.

This prodigious Fish had, besides, upon its Head, a kind of Crown raised above the rest of the Skin two Inches or thereabouts, made in an oval Form, and ending in a Point. Above three Hundred People of the Isle eat plentifully of the Flesh of it, and found it very delicate. It was larded with a white Fat; and being boiled, it parted into Flakes like Cod Fish, but had a much more savory Taste.

The Head and Horn of this Fish were preserved some Time in that Island, but being afterwards made a Present to a curious Person, the Ship in which he was bringing them over was lost, and in it this precious Rarity.

We ought to undeceive those who believe that what we now call the *Unicorn's Horn*, the *Latins*, *Unicornis*, and the *Greeks*, *Monoceros*, is the Horn of a Land Animal, whereof mention is made in the *Old Testament*, since it is nothing else but the Horn of the *Narwal*, which, as to the Choice of it, ought to be the whitest, largest, and heaviest. Some Time ago these Horns were so rare, that Mr. *Racq*, a Physician at *Florence*, said that a German Merchant sold one of them to a Pope for 4500 Livres, which is very much different from what they are at present, since we can buy the very finest at a much easier rate.

Narwal, *Rhoar*, or the *Sea Unicorn*, is a very large Fish, that carries upon his Front a Horn of five or six Feet long, that is heavy, white, smooth, and twisted, being of a spiral Figure, and hollow within, very like Ivory. He carries this for his Defence, and with it will attack the biggest Whales. This Horn affords a great deal of volatile Salt and Oil; is cordial, sudorifick, and proper to resist Infections, and cure Epilepsies. The Dose is from half a Scruple to two Scruples. They wear it also in Amulets hung about the Neck, to preserve them from infectious Air. Those who keep these for Curiosities, have the Horn entire, and chuse the longest and most weighty.

[The *Narwal* and *Unicorn's Horn* I have already spoken of in the Chapter of the *Unicorn*.

As to this other Kind, I am afraid Mr. *Dumantel's* Story is too strange to be true, no Author of any Credit having ever seen or mentioned any such Fish.]

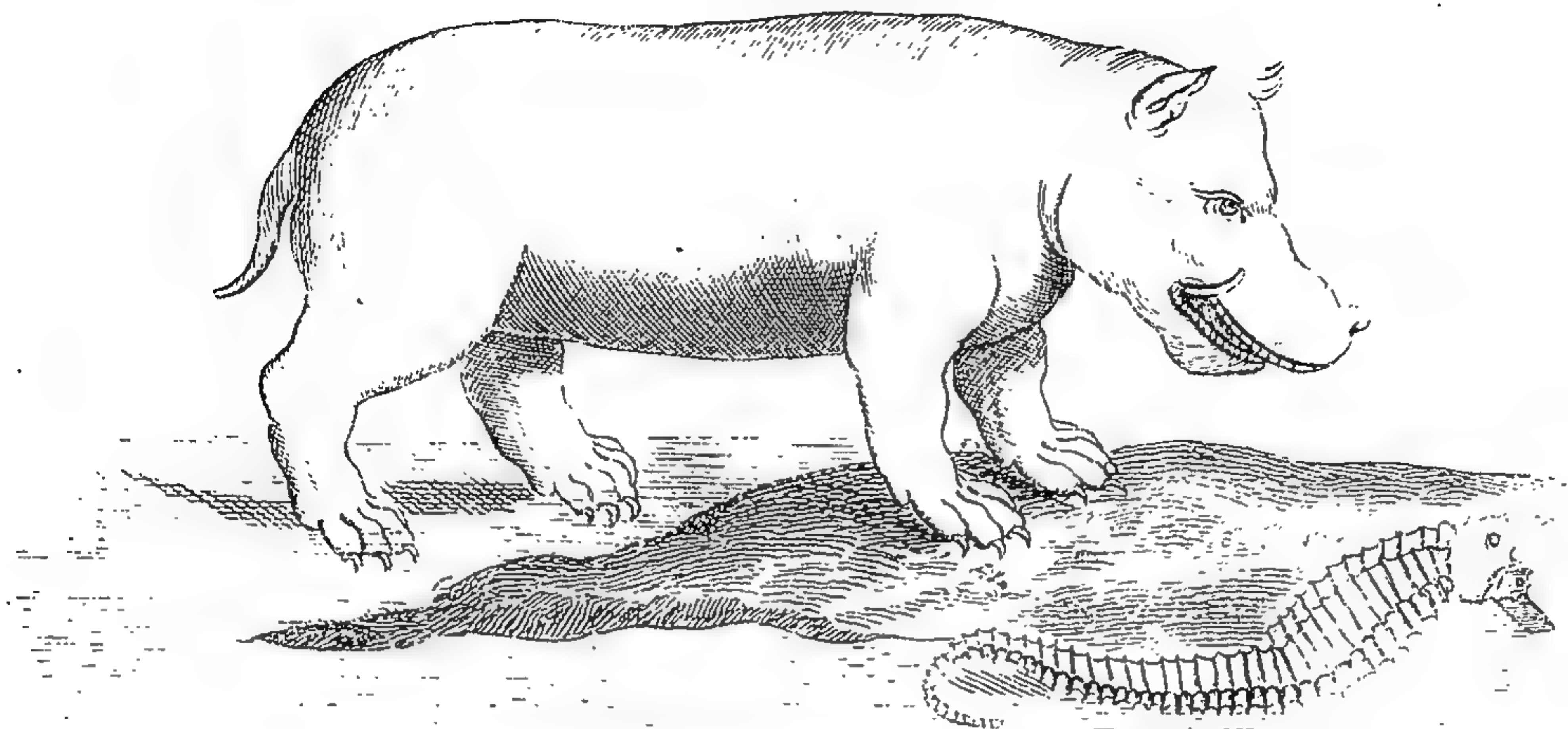
34. Of the Sea-Horse.

THERE is in the Rivers *Nile* and *Pomet. Niger*, and others of *Africa*, an Ani-

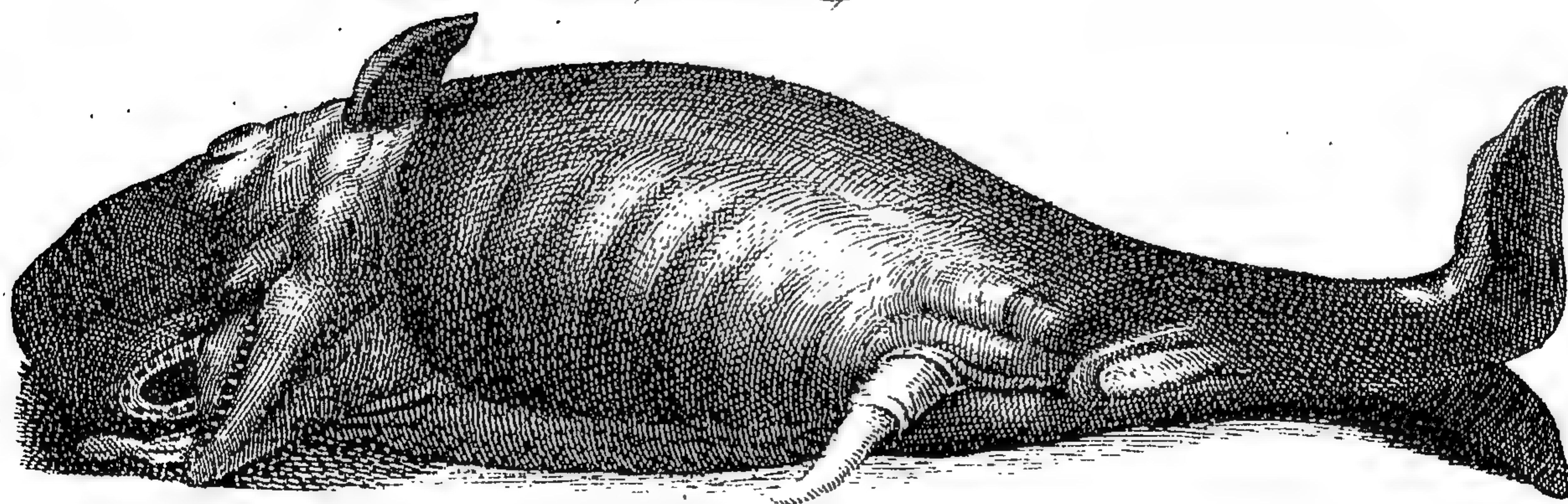
mal

of Animals .
The Sea Horse .

34



The Whale



mal that has some Resemblance to an Ox, which I thought proper to give you the History of, upon Account of the Teeth which we sell. This Animal has nothing of the Likeness of a Horse; but as to his Size rather looks like an Ox, and his Legs are like the Bear's. He is about thirteen Feet long, and four Feet and an half broad; and three Feet and an half high from the Belly, which is rather flat than round; the Legs are three Feet about, and each Foot is a Foot broad, the Head is two Feet and an half in Breadth, three Feet long, nine Feet about, and looks very thick in respect of the rest of the Body; the Mouth is a Foot wide, the Nose is fleshy, and turns up; the Eyes are small; the Ears little and short, not above three Inches long; the Hoofs are cleft into four Parts, and the Tail is like that of a Hog; the Nostrils are winding, and about two Inches and an half deep, the Muzzle has some Resemblance to that of the Lion or Cat, and is hairy, though there is no Hair upon the rest of the Body. It has sixteen Teeth in the Under-jaw; and the two which are at the End are half a Foot long, and two Inches and an half broad, and half a Foot thick; on each Side one may also see seven Grinders that are short, but thick; it has also as many in the Upper-jaw, which it moves as the Crocodile: Its Teeth are as hard as a Flint Stone. The Antients believed that this Animal emitted Fire when he ground his Teeth one against the other.

The *Æthiopians*, and other People of *Africa*, eat the Flesh of them; and they are an amphibious Creature, living both on the Land and in the Water. Father *Vandenbroeck* says he saw four Sea Horses feeding in the Country of *Lavango*, during his Journey to *Angola*, which were like huge Buffalo's; their Skins were very shining; their Heads like a Mare's; their Ears short, and their Nostrils large; having two Tusshes in their Mouths like the Boar's. Of all the Parts of this Animal, there is nothing used in *France* but the Teeth, with which, by reason of their Whiteness and Hardness, they make artificial Teeth for People who have lost them. Though *Matthiæus* says, that the Ashes of the *Hippopotamus*, or Sea-Horse, incorporated with Tar, or other fat Body, will make the Hair grow. The Tooth worn, or a Ring made thereof, helps the Hemorrhoids, and easeth the Tooth-ach. A Ring made of the Pizzle, and worn, is said to cure the Cramp. And the Testicles have the Virtue of *Castor*.

Hippopotamus, or the *Sea-Horse*, is a *Lemery*. four-footed Animal, as big as an Ox.

The Head is very thick, resembling more that of a Calf than a Horse; the Mouth is a Foot long, and the Jaws set with strong hard

Teeth, that will strike Fire like a Flint with Steel, and are very proper to make artificial Teeth with. These Creatures delight to live in the large Rivers within Land, that they may enjoy both Land and Water, feeding upon Fish, Flesh, Plants, Pulse, and even Men, Women, and Children, if they can meet with them. The Skin is so thick, that it is able to defend from all manner of external Violence, no Bullet or Spear being able to pierce it; the Ashes whereof take away Spots from the Skin; and the Fat, applied to the Pulse or Stomach, relieves against Fits of the *Ague*, and is emollient and nervous.

[The *Quadruped*, called the *Sea-Horse*, is the *Hippopotamus*. *Jonsf. De Quad.* 67. *Raii Synops. Animal.* 123. *Mont. Ex.* 5. The Testicles and Teeth of this Creature have had many Virtues ascribed to them, but are never used at present.

The other *Sea-Horse*, as it is called, which is often kept by the Druggists, and hung up as a Curiosity in the Shops of Country Apothecaries; and which our Author has figured in the same Plate with the former, though he has given no Account of it, is the *Hippocampus*, *Rond. De Pisc.* 2. 114. *Raii Ichtiogr.* 157. *Bellon. De Aquatil.* 446. It is an odd shaped little Fish, caught in the *Mediterranean*. It is the Ashes of this, and not of the *Hippopotamus*, which *Dioscorides* recommends, mixed with Tar, to make the Hair grow.

It has also been said to be a Remedy for the Bite of a mad Dog, but at present it is never used.]

35. Of the Sea-Cow.

VACCA Marina, *Manati*, or the *Sea-Cow*, according to the Relation of

Father *Du Tertre*, is a Fish altogether unknown in *Europe*. It is sometimes from fifteen to sixteen Feet long, and seven or eight Feet about; it has the Muzzle of an Ox, and the Eyes of a Dog. The Sight is very weak, and it has no Ears, but in their stead two little Holes, whereinto one could scarcely put a Finger; by these Holes it hears so exquisitely, that the Weakness of the Sight is sufficiently supplied by the Quickness of the Hearing. Under the Belly, next the Head, are two little Feet in form of Hands, having each four short Fingers and Nails, and therefore it was by the *Spaniards* called *Manati*, which is to say, the Fish with Hands. From the Navel it grows less and less, till it forms the Tail, which is in the Shape of a Baker's Peel. It is a Foot and an half broad, five or six Inches thick, clothed with the same Skin as the Body, and entirely made up of Fat and Nerves. This Fish has no Scales like other

other Fish, but is covered with a Skin thicker than that of an Ox; the Hide is of a very brown Slate Colour, like that of the *Sea-Wolf*. The Flesh tastes like Veal, but it is a great deal finer, and covered, in several Parts, with three or four Fingers thick of Fat, of which they make *Lard*, as they do of Hog's. This is excellent, and several People melt it and cast it into Cakes, which they eat with Bread instead of Butter.

The Flesh of this Animal being salted, loses much of its Taste, and becomes as dry as Wood; but I believe that must be attributed to the Salt of the Country, which is very corrosive. They find in the Head of this Animal four Stones, two large ones, and two small ones, to which they assign the Property of dissolving the Stone in the Bladder, and bringing away of Gravel from the Kidneys; but I cannot approve this Practice, since this Medicine is too emetick, and acts upon the Stomach with too much Violence. The Food of this Fish is a small Herb that grows in the Sea, which it feeds upon as the Ox does on those of the Field; and after having glutted itself with eating, it hunts out for the fresh Water up the Rivers, where it drinks plentifully twice a Day. After having eat and drank its Fill, it lies sleeping, with the Snout or Muzzle half out of Water, whereby it is discovered at a good Distance by the Fishermen, who presently set about to take it after the following Manner:

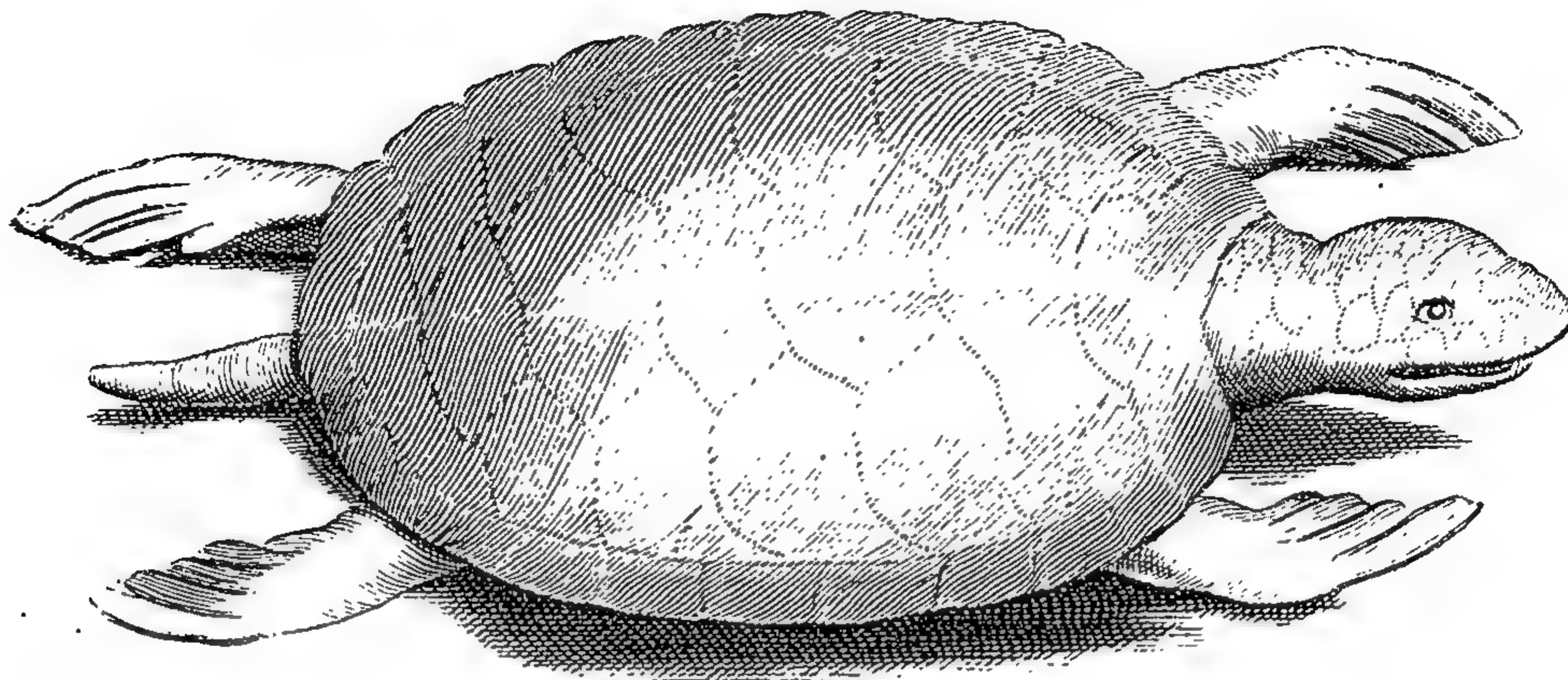
Three or four Men, or sometimes more, take a little *Canoe*, which is a small Boat, all of a Piece, hollowed out of a Tree, in Shape of a Shallop: The Rower is upon the Stern of the *Canoe*, where he so manages the Flat of his Oar, moving it in the Water, as not only to direct the *Canoe*, but to move it forwards so swift, as if carried by a Sail before the Wind. The Spear-man, which is he that strikes the Beast, stands upright on a little Plank, at the Head of the *Canoe*, holding the Spear in his Hand, which is a Sort of Pike; at the End of which is fixed a Harping-Iron, or Javelin. The third sits in the Middle of the Boat, to manage the Line or Cable, that is tied to the Harping-Iron, to draw when the Beast is struck; they all keep perfect Silence, because this Creature hears so exquisitely, that a Word, or the least Noise of the Water dashing against the Boat, is enough to awake her, and put her to Flight, and disappoint the Fishermen of their Hopes. It is diverting to see how the Spear-man trembles, as it were, for fear the Prize should escape, and fancies the Rower, or Steersman, does not employ half his Strength, though he does whatever he can with his Hands, and keeps his Eye fixed on the Spear, by the End of which the Spear-man points out the Tract

he must keep, to come at the Place where the Fish lies fast asleep. When the *Canoe* is within three or four Paces of it, the Spear-man gives a Stroke with all his Strength, and darts the Iron at least half a Foot into the Flesh; the Shaft falls upon the Water, whilst the Iron Head remains sticking in the Breast, which is now half taken. When this Animal perceives herself so violently struck, she musters up all her Strength, and makes use of it to escape; she bounds like a Horse broke loose, cuts the Waves, as an Eagle does the Air, and makes the Sea foam, covering it with white all the Way through which she passes, believing the while she is escaping from her Enemy, whom notwithstanding, she carries along with her; insomuch that one would take the Spear-man for *Neptune* drawn in Triumph by a Sea Monster. In short, after having thus, for some time, drawn her Destruction after her, and lost a great Share of Blood, her Strength fails her; and being as it were brought to Bay, she is forced to stop short to take a little Rest; though she no sooner lies by, but the Spear-man, to bring himself nearer, draws the Line, and makes a second Stroke with more Violence than the former, at which she is able to make but slender Efforts, and in a little Time is reduced to an Extremity, and then the Fishermen easily enough drag her a-shore at the first little Island they come at, where they put her into the *Canoe*, if big enough to hold her. The Female of this Species has two young ones at once, and has under her Belly two Teats which they suck; the young always follow the Dam so closely, that when they catch her they are also sure of them. The Flesh of this Animal makes a considerable Part of the Food of the Inhabitants of those Countries: They carry several Ship-Loads of it every Year from the *Terra firma*, and the neighbouring Isles; and as well at *Guadaloupa*, *St. Christopher's*, *Martinico*, as other adjacent Islands, they sell a Pound of it for a Pound and a half of Tobacco.

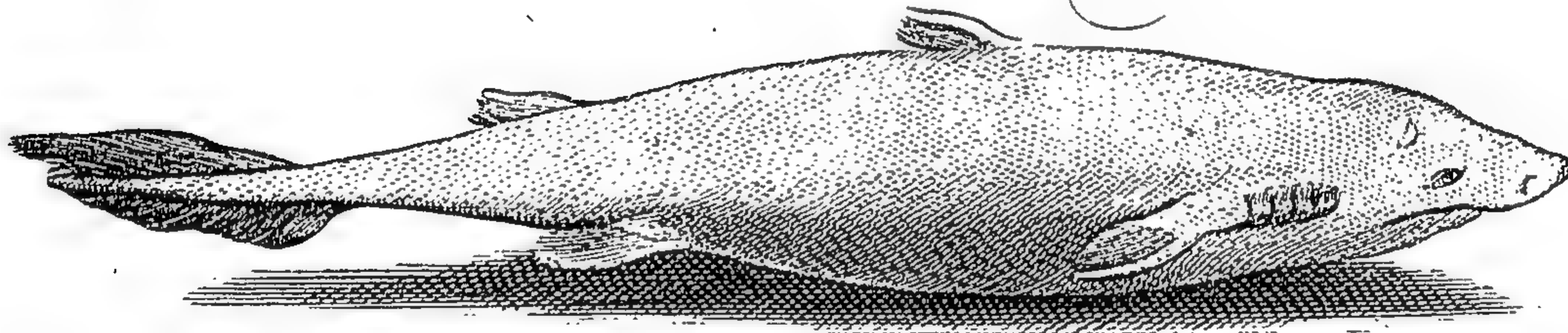
The Stone taken from this Animal has many medicinal Uses assigned to it, and was a Thing unknown to the Antients. It is a whitish Stone, or rather a Bone taken out of the Head that is white and hard; sometimes like a Tooth, and somewhat resembling the whitest Ivory, but much harder. It is a fixed *Alkali*, absorbs Acids, eases the Pain of the Stomach, cures Heart-burnings and the Cholick; is good against Stone and Gravel, and to expel Urine. The Powder is made by Levigation, and is given from a Scruple to a Drachm. The Calx is made by calcining it either alone, or with Sulphur and Nitre. Dose from half a Drachm to a Drachm, in any appropriate Liquor.

Adumati

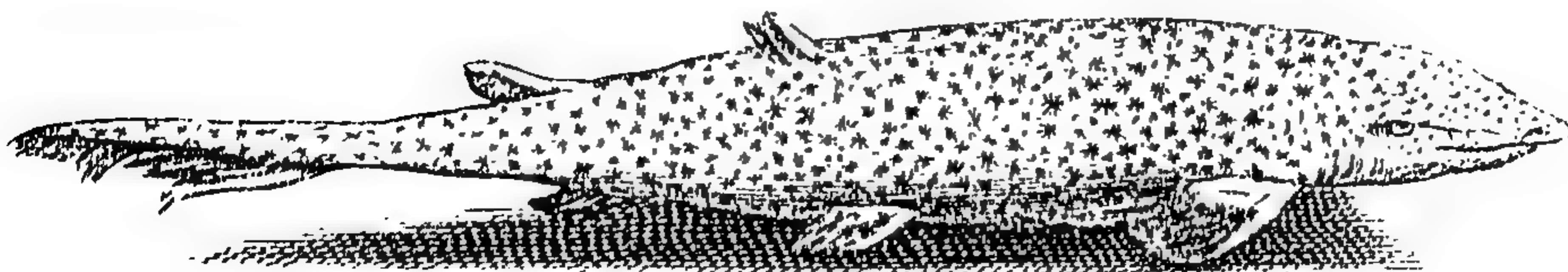
of Animals.
36
The Sea Tortoise.



37
The Sea Dog.



The Roufette.



Manati, vel Vacca Marina, the Sea-Lemery. Cow, is a large Fish of *America*, of fifteen or sixteen Feet long, almost round, being five or six Feet Diameter, of a frightful Figure. The Head is like a Calf's, but the Snout is more meagre, and the Chin thicker; the Eyes are small, and require a great Light, for the Sight is very weak; the Ears are nothing but two little Holes, though the Hearing is very fine. The Skin is used to make Shoes of; the Fat or Lard, besides that the Inhabitants eat it for Butter, is a good Emollient, and discussing Unguent. The Stones taken out of the Head, which are of two different Sizes, are reckoned emetick; though they are given inwardly in Powder, to twelve Grains and upwards, for nephritick Pains, and Stone in the Kidneys and Bladder.

[The *Sea-Cow* is the *Manati Indorum*, *Ald. De Pisc.* 728. *Manati Phocæ Genus. Clus. Evot.* 132. *Manati seu Vacca Marina. Raii Syn. An.* 193. It is an amphibious Creature, and feeds on Vegetables.

The Stone of the Head, as it is called, is the *Os Petrosum*, which has been greatly commended, but it is at present never used.]

36. Of the three Kinds of Tortoises, viz. The Frank or True Tortoise, the Kaouanne, or Great-headed Tortoise, and the Caret, or Least Tortoise.

Pomet. THE Figure which I have given of the Tortoise is so exact, says the Reverend Father *Du Tertre*, that it would be losing of Time to give any Description of its Shape; and I shall think it sufficient to describe what is peculiar to those of the Isles, and what distinguishes them from the *European* Sort. We may say in general of the three Sorts of Tortoises, that they are dull, heavy, stupid Animals, and almost without Brains; for in all the Head, which is as big as a Calf's, there is not found above the Bigness of a small Bean of Brain: Their Sight is excellent; their Bulk so large, that the Shell they carry on their Backs is sometimes five Feet long, and four broad: Their Flesh, particularly that of the *Frank Tortoise*, is so like that of an Ox, that a Piece of Tortoise compared with a Piece of Beef, cannot be distinguished but by the Colour of the Fat, which is of a yellowish green. There are of these Tortoises, which taken from the Bone yield half a Barrel of Provision, without taking in the Head, the Neck, the Feet, the Tail, the Guts, and the Eggs, which are sufficient to feed thirty Men. Besides which, they make from the superfluous Fat, fifteen or twenty Pots of Oil, which is as yellow

as Gold, excellent for frying withal, and all sorts of Sauces, especially when new; for when old it is fit for nothing but Lamps. The Flesh of the *Tortoise* is so full of vital Spirits, that being cut in Pieces over Night, it will stir the next Day.

I believed a long Time that the *Tortoises* of these Parts had three Hearts; for from the upper Part of the Heart, which is as large a Man's, proceeds a large arterial Trunk, to which are joined two other, as it were, Hearts, on each Side one, about the Size of an Hen's Egg, and of the same Shape and Substance with the former; though I have since changed my Opinion, and believe firmly that they are nothing but the Ears of the Heart; yet be that as it will, 'tis certain that when rightly displayed upon a Table, it makes the Resemblance of a *Fleur-de-Lis*, which may be reckoned a good Omen of the future Success of the *French Colonies* in *America*, since the Providence of God, which does nothing in vain, has planted, as it were, the *Fleur-de-Lis* in the Heart of this Animal, as the Hieroglyphick of this Country.

Of the Kaouanne, the Loggerhead, or Great-headed Tortoise.

This differs from the true *Tortoise*, in that the Head is much larger, in Proportion to the Body, than that of other *Tortoises*; it is more mischievous than the other Kinds, and defends itself with its Mouth and Feet when they are about to take or turn it: And though it is much the largest of the three Sorts, it is notwithstanding the least esteemed, because the Flesh is black, of a Sea-Smell, and an ill Taste. Those who fish for it mix it with the true *Tortoise* to get a Price for it, but it communicates its ill Taste to it. The Oil made from it is acrid, and spoils the Sauces with which it is mixed, and is only used when the other cannot be had: However, it is not altogether useless, because it serves to burn in Lamps.

Sometime after the Shell of this Kind of *Tortoise* is taken off, when the Cartilages begin to rot, there fly off from it eight Plates much larger than those of the Caret, but thinner and marbled with black and white. They are used in some Kinds of Work, and if they were thicker, would vye with the Caret Shell.

Of the Caret, or Small Tortoise.

The Caret is the least of all the three Kinds of *Tortoises*. The Flesh of it is not so good as that of the *Frank Tortoise*, but is a great deal better than that of the *Kaouanne*; the Oil drawn from it is excellent for Weakness of the Nerves, *Sciatica*

tica Pains, and all cold Defluxions. I know Persons who have found it very useful for Diseases of the Kidneys, caused by over-straining, &c. but that which makes it particularly valuable, is the Shell upon its Back, that is worth ten Shillings a Pound. What they take of this from the *Caret* consists of thirteen Leaves or Plates, eight of which are flat, the other five hollow or bending; of the flat there are four large ones, which are a Foot long, and seven Inches broad. The fine *Caret Tortoise* Shell ought to be thick, clear, transparent, of the Colour of Antimony, and marbled brown and white. There are of them that bear six Pounds of Flakes of this Shell upon their Backs; they make Combs and other fine Works of them, that are very beautiful and valuable. The Way of raising the Flakes from the large Shell, which is properly the *Tortoise's* House, is by making, when all the Flesh is taken out, a Fire underneath; and as soon as the Heat affects the Flakes, they are easily raised with the Point of a Knife.

Testudo, the *Shell-Fish*, or *Tortoise*, *Lemery*. is an aquatick four-footed Animal, that is very ugly in all its Limbs, but covered with a fine large Shell, smooth, hard, bony, oval, and marbled, or stained with several Colours. This Creature may be reckoned amphibious, living upon Land and in the Water. There are different Sizes of them; but those in *America* are often met with of five Feet long, and four Feet broad; their Flesh is good Food, and has the Taste of Beef, and yields a yellow Oil, very proper for the Lamp. The *Europeans* use the *Tortoise* Flesh in their Kitchens as good Meat. They abound with a great deal of volatile Salt and Oil, are proper for Diseases of the Breast, and Consumptions; and are very restorative being eaten in Substance, or else the Broth of the Flesh. The Blood dried, is esteemed in epileptick Fits; the Dose being from twelve Grains to a Drachm.

The Way of Fishing for the Tortoise.

There are three Ways of *Tortoise* *Fishing*, viz. in coupling Time, with the Spear, and when they come ashore. The *Tortoises* begin to couple in *March*, and continue it till the Middle of *May*. I shall not take Notice of all the Circumstances that relate to this; it will suffice to say, that it is done on the Water, so that they are easily discovered; and they are no sooner perceived, than two or three People throw themselves presently into a *Canoe*, make towards them, and come at them with Ease. They slip a Noose around their Neck, or one of their Feet;

or, having no Line, they lay hold of them with their Hand, by the Neck, where it is uncovered by the Shell; sometimes they take both of them together, but most commonly the Female escapes, and the Males at that Time are very lean and hard Meat, but the Females very good.

The Spear for the *Tortoise* is much of the same Sort as that for the *Sea-Cow*, only instead of the barbed Iron, a Piece of square Iron of about half a Finger's Length, and very sharp, is fastened to the Top of the Spear, to which is tied a Line; the Spear being thrown at the Back of the *Tortoise*, the Iron Head is struck half Way into the Shell, which being of a hard bony Substance, it sticks as firm as if fixed in a solid Oak. The *Tortoise* perceiving himself struck, makes the same Struggle to get loose as the *Sea-Cow*, and the Spear-man uses the same Diligence to take him. Some say that the Force abates proportionably to the Blood that is lost; but they are ignorant that the *Tortoise* does not lose a Drop of Blood at the Place where it is wounded, 'till the Iron is taken out.

The Time of taking the *Tortoise* upon Land is from *April* to *August*; for at that Time the *Tortoise* perceives the Inconvenience of its Bulk by its own Weight and great Quantity of Eggs, which are sometimes above two Thousand, and being forced by a natural Necessity, she quits the Sea, during Night, and comes to find out upon the Shore a proper Place to lay her Burthen in, or at least some Part of it; and having found out one convenient for this Purpose, which is always a Heap of Sand, she contents herself that Night, in only taking a View of the Place, and retires gently into the Sea again, leaving the Business to be done the Night following, or very speedily; all the Day she feeds upon the Plants growing on the Rocks in the Sea, without being far distant from the Place where she is to lay her Burthen.

The Sun being upon the Declension, they may be seen drawing near to Land, and watching here and there, as if they mistrusted an Ambuscade: And as their Sight is very piercing, if they perceive any Body on the Shore, they will seek out for another Place wherein they have more Confidence; but if they see no Body, they come ashore when it is dark. After having observed all Sides with great Diligence, they begin to work and dig in the Sand with their fore Feet, making a round Hole of a Foot broad, and a Foot and a half deep; which being made, they lay therein two or three Hundred Eggs, as big and round as a Tennis-Ball. The Egg-Shells are soft as wetted Parchment; the White will not boil hard at all, though the Yellow hardens easily. The *Tortoise* remains above an Hour in laying her Eggs; and during that Time a

Coach

Coach might drive over her Body, and she not stir from the Place. Having discharged her Burthen without Interruption, she covers the Hole so dexterously, and throws the Sand about every where so naturally again, that it is extremely difficult to find the Eggs: That being done, she leaves them, and returns to the Sea. The Eggs are hatched in the Sand in about forty Days Time; at the End of which the little *Tortoises*, being as big as young Quail's, make strait to the Sea, without being shewn the Way. Those that are taken by the Way, they fry whole; and so they are delicious Meat.

[The Kinds of *Tortoise* of which any Part is used in Medicine, are the Land *Tortoise*. *Testudo terrestris vulgaris* Raii Synops. An. 243. *Testudo terrestris* Fons. de Quad. 144. Aldrov. de Quad. Ovip. 705. The Blood of this kind is esteemed good in Hectics and Epilepsies.

2. The *Turtle*, or *Sea Tortoise*, *Testudo marina vulgaris* Raii Syn. Anim. 254. *Testudo marina* Ald. de Quad. Ov. 712. Fons. de Quad. 147. The Gall of this Species is esteemed good in Distemperatures of the Eyes, and the dried *Penis* in the Stone.

And, 3. The *Fresh-water Tortoise*. *Testudo aquarum dulcium et lutaria*. Raii Syn. An. 254. *Testuda aquæ dulcis et lutaria*. Aldrov. de Quad. Ov. 710. Fons. de Quad. 146. The Blood and Gall of this are said to possess the Virtues of the former, but none of them are much used with us.]

37. Of the Sea-Dog.

Pomet. THE *Sea-Dog* is a pretty large Fish, that is found in several Parts, but especially about *Spain*, and at *Bayonne*. Of all the Parts of this Fish, we deal in none but the Skin, which we sell, because of the great Service it is of to the Workers in Wood, as Turners, &c. being very proper to polish withal. The true *Dog-Skins*, to be fine, ought to be large and broad, of a rough Grain, not too large nor too small, and supplied with Ears and Fins. The Brain of this Fish dried is very aperitive and good in the Gravel, and for Women at the Time of their Delivery; the Dose is from a Scruple to a Drachm in White Wine.

We have besides, from the *Lower Normandy*, the Skin of a Fish that is very like the *Sea-Dog*, and which they call *Doucette*, or *Roufette*, the *Spotted-Fish*, which some Workmen use instead of the *Dog-Skin*, tho' there is a good deal of Difference, because the *Dog-Skin* is very rough, and the *Roufette* very little so; and besides, the *Dog-Skin* is always brown, and the *Roufettes* are of

different Colours, and constantly spotted on the Back with small Stars; they are also much less, which is the Reason why these Skins are very little used at *Paris*, and indeed scarce any where but in *Auvergne*. Those two Kinds of Skins are also serviceable to other Tradesmen, as Sheath and Case-Makers. We sell likewise another Fish-Skin, which has no other Use in *France*, *England*, and other Parts, than to make Knife Handles of.

Mustelus, or *Galeus laevis*, is a Kind of *Sea-Dog*, which the *Italians* call *Lemery*. *Pesce Columbo*; it is a Fish that weighs above twenty Pounds; it is covered with a Skin that has no Scales, that is soft to the Touch, and of a whitish Colour; it has no Teeth, but the Jaws are rough, and it feeds upon Fish. The Fat is resolute and emollient.

There is another kind of *Dog-Fish*, which is called *Galeus Asterius*, sive *Mustelus Stellaris*, or the *Star Dog-Fish*, that is like the former, only for the Spots upon it that are in the Form of Stars. The Virtues and Uses of it are the same with the other. This Fish is called *Mustelus*, as if you should say, *Mus stellatus*, because this Fish, in its Colour, somewhat resembles that of a Mouse or Rat, and every one of the Species are spangled with Stars.

[The *Sea-Dog*, or *Hound-Fish*, is the *Canis marinus* aut *Galeus*. Schonef. Ichth. 29. *Galeus acanthias* sive *Spinax*. Raii Ichthogr. 56. Aldrov. de Pisc. 399. The other kind, or *Starry Dog-Fish*, is the *Catulus major vulgaris*. Raii Ichth. 62. *Canicula Aristotelis Rondeletio* Aldr. L. 3. cap. 34.

Their Skins are used by Artificers in different Kinds of Work, but I know of no Use that was ever made of either of them in Medicine.]

38. Of the Tunny-Fish.

THE *Tunny*, which the *Latins* call *Pomet*. *Thunnus*, is a pretty large, heavy, big-bellied Fish, which is plentiful in the *Mediterranean*, especially about *Provence*, and at *Nice*, from whence comes what we sell. There are likewise a great many of them upon the Coast of *Spain*. The Time of fishing for the *Tunny* is in *September* and *October*; and there are so many things peculiar therein, that it is by the Fishers generally shewn to Strangers. These two Months are the Time when the *Tunny* runs from the grand Ocean into the *Mediterranean*, towards the *Levant*, as the *Anchovies* do. When the Month of *September* comes, they cast into the Sea large Nets made of Rush Cords, which they call *Madraques*, which are divided as it were into several Partitions, of which the first is larger than

the others; so that the *Tunnies* entring the larger first, do not return till the Net is full, which it is in a small Time, where the Fishery is good, as well from the Plenty of the Fish, as because when one *Tunny* is gone in, the rest follow in a Flock like Sheep. The Net being taken out of the Sea, the Fish die, not being able to live out of the Water; then they hang them up in the Air, open them, take out their Entrails, and take off the Head; and having cut them in Pieces, broil them on large Gridirons, and fry them in Oil Olive; and after having seasoned them with Salt, Pepper, and Cloves, and some Bay Leaves, they put them into little Barrels, thus dressed, and ready to eat with fresh Oil Olive, and a little Vinegar, to transport into several Parts.

We have two sorts brought to *Paris*, which have no other Difference but that some have the Back Bone taken out, and for that Reason are called *boned Tunny*, and are usually put up in little white Wood Barrels, broad at the Bottom, and narrow at Top; that which has the Bones left in it is in little round Barrels. Chuse both sorts new, firm, well done in good Oil, and the Flesh white like Veal. Its Use is very common in *Europe* and several other Parts of the World; as well because it is always ready to eat, as because it is of an excellent Taste, like Veal. They commonly catch with the *Tunny* another Fish, which the *Provincials* call *Imperadro*, or *Emperor*, and Sea Hogs are also seen there; they are always two and two together; but as they are accustomed to leap out of the Water, they get out of the Nets and suffer not themselves to be taken; it is wonderful to see how they leap both together in one Moment, and fall again into the Sea at once, as if they were tied together.

Thunnus, vel Thynnus, or the *Tunny*, *Lemery*. is a large, heavy, big-bellied Fish, which is found plentifully in the *Mediterranean Sea*, in *Provence*, *Italy*, and *Spain*. It is covered with large, smooth, straight Scales, and eats Sea Wrack, and other sort of maritime Food. The Flesh is firm, very good to eat, being of a Veal Taste, but is salted to prepare and keep it for Transportation, when it is called *Tunny*. It is very nourishing, and of good Juice, and yields a great deal of volatile Salt. It is reckoned proper to resist Poison, against the Bite of a Viper, &c. being eat, and applied outwardly. This Fish is called *Thunnus*, from the *Greek Word* *Θύνω*, to be carried with Impetuosity, because this Fish moves so swiftly.

[The *Tunny*, or *Spanish Mackarel*, is the *Thynnus seu Thunnus Rait* *Istbiogr.* 167. *Thunnus Aldr. de Pisc.* 112. *Orcynus Rond. de Pisc.* 1. 249. It is a good Food, and is much commended against

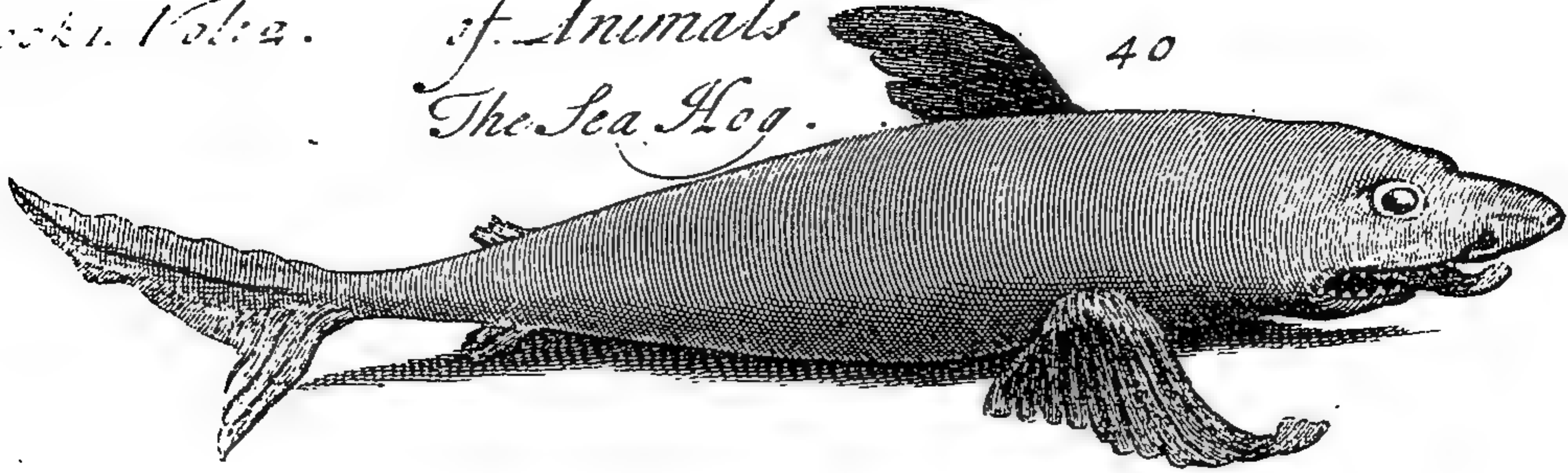
venomous Bites, but I am afraid is but a feeble Remedy in Cases of such Consequence.]

39. Of Anchovies.

BESIDES the *Tunny*, we sell *Anchovies*, *Pomct.* that come from the same Parts as the *Tunny*; and we have considerable Trade with them; we chuse the least and newest, white without, and red within, that are firm, and have round Backs, because they pretend that the large and flat ones are Pilchers. When the Barrels are opened, the Pickle ought to be well tasted, and of a good Smell.

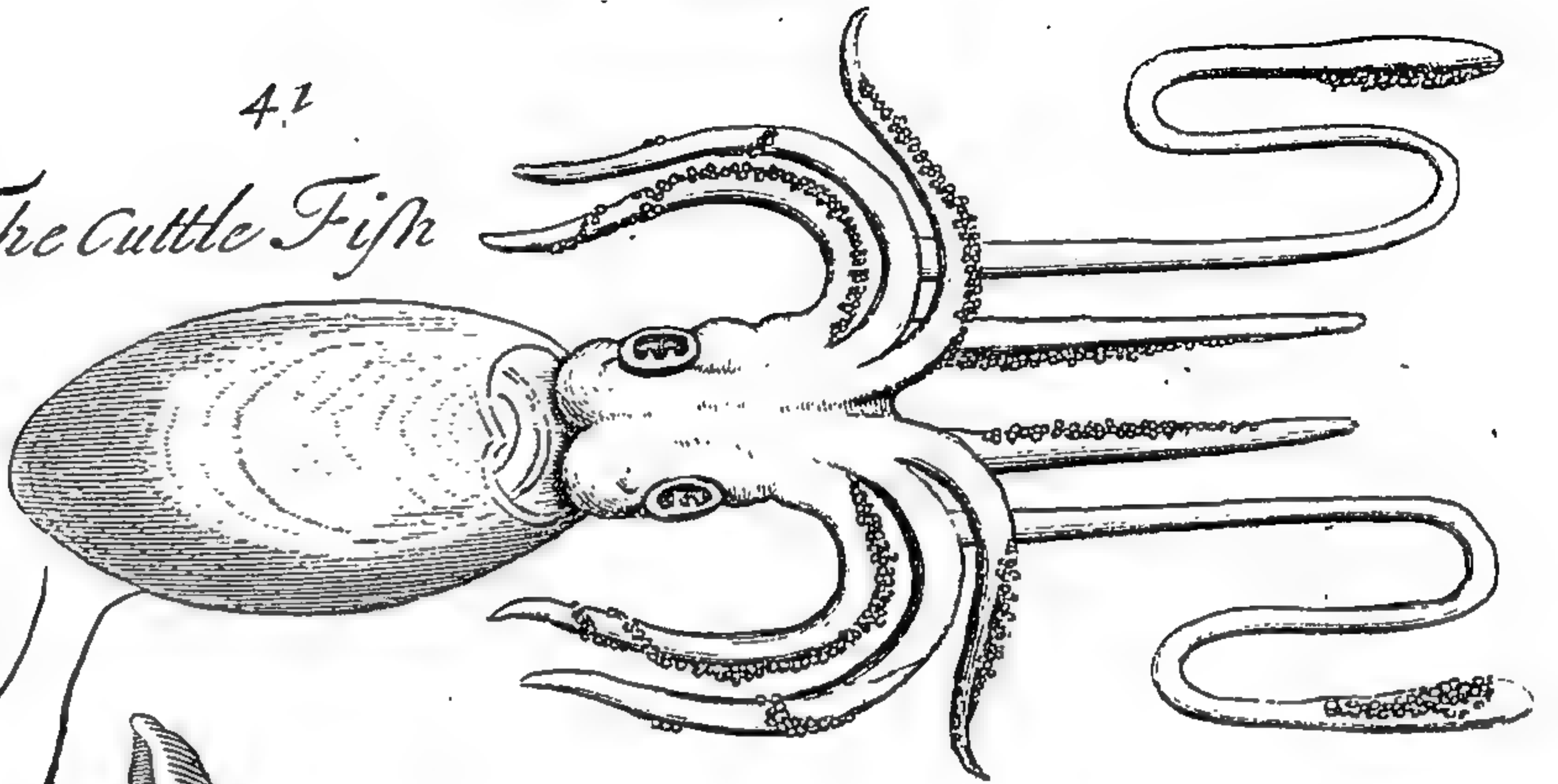
Anchovies are taken in several Parts, as in the River of *Genoa*, in *Catalonia*, at *Nice*, *Antibes*, *St. Tropez*, and other Places in *Provence*. They are taken most commonly in the Night, and always in *May*, *June*, and *July*, which are the three Months in the Year that they come from the grand Ocean into the *Mediterranean* to go to the *Levant*. When they fish for the *Anchovies*, and would take a Quantity, they light a Fire upon an Iron Grate at the Poop of the Ship, to the end that the little Fish following the Light, may be the easier taken; but that which is very remarkable in this Fishing, is, that the *Anchovies* that are taken by means of the Fire, are not so good, or so firm, nor will they keep so well, as those which are taken without it. The Fishery being done, they tear from the Head the Gills, and other superfluous Garbage; and this is the Difference betwixt them and the Pilchers, where they are left in; and not, as Mr. *Furetiere* says, because of the Gall, which he, in his Book, takes notice of to be in their Heads. As to the manner of ordering them, they do nothing but range them in little Barrels of different Weight and Sizes, not weighing above five or six and twenty Pounds, in which they put a due Quantity of Salt with the *Anchovies*. We sometimes, but very rarely, have dried Pilchers, prepared the same Way as red *Herrings*; but the little Consumption there is of them gives no Encouragement to the Dealers to make any Demands for them. Being at *Royan*, a little Town of *Naintogne*, where there are a great many Pilchers, several Fishermen assured me, that these Fish never swarm but in Shoals, and that under the Conduct of a King, or Captain, like the Bees.

Aptua, sive Aphya, or the *Anchovie*, is a little Sea Fish, as thick and long as one's *Lemery*. Finger, having a thick Head. The Eyes are broad and black; the Body of a silver white, and red-lish within, and the Back round. They do not swim but in Companies, and cling full



41

The Cuttle Fish



The Hermit Fish



42
The Crayfish

43
The Hermit

fast one to the other. These Fisheries are made in several Parts; and when the Fish are taken, they gut them, and take out of the Head what is apt to putrify, then salt them up in Barrels. The little *Anchovies* are valued more than the large ones. They contain in them a great deal of Salt and Oil. They are aperitive, and proper to raise the Appetite; but they serve more for Food than Physick. The *Sardin* is a kind of *Apua*, that is something larger and flatter than the *Anchovy*, but not so well tasted. The *Melette*, or *Sprat*, is a little Fish they eat in *Languedoc*, and which partakes something of the Nature of the *Apua*, which is the Name given in general to these little Fishes, and in particular to the *Anchovy*.

[The *Anchovy* is the *Encrascolus* Ald. de Pisc. 214. *Rond. de Pisc.* 1. 211. *Raii Ichth.* 225. *Halecula* Bellon. De aquat. 169. *Encrascolus* quos alii *Engraulis*, alii *Lycestomos* appellant, *Rondelet. Gesn. de Aq.* 68.

Besides the Use in Food, it is sometimes laid to the Feet in Fevers; but whatever good arises from it, is more to be imputed to the Salt than the Fish, for the Heat of the Part will put the saline Particles in Motion, which, by vellicating the sensible Fibres, may very naturally occasion a more than ordinary Derivation of the Fluids that Way.]

40. Of the Sea-Hog.

Pomet. THE *Sea-Hog* is a large Fish, very well known, the Use of which is very considerable, because it is so excellent Food, that some have ranked this among the royal Fish. Of all the Parts of this, we sell none but the Oil aromatized, or plain, which is nothing but the Fat melted, and by the Addition of some Aromatics, altered from its stinking Smell, and made pleasant. They assign to the Fat and Oil of the *Sea-Hog*, the Property of curing cold Humours. Some Apothecaries, by the Retort, draw from this Fish several Preparations, to which they attribute different Virtues.

Percus marinus, or the *Sea-Hog*, is a *Lemery.* large nimble Sea Fish, that is almost always leaping out of the Water, and swims with a vast Swiftness. They commonly call it *Simon*, *quasi sinum rostrum habens*, as having a flat Nose or Snout. The Tongue is short, broad, and fleshy; the Teeth little and sharp, ranged like the Teeth of a Comb; the Eyes are large, but so covered with the Skin, that they appear only like the Apple of the Eye, yet the Sight is very fine; the Voice is like that of a Person crying; the Back is hollowed, and bent outwardly. It swims by means of two Wings, or strong able

Fins, which are set on at the Place of the Shoulders. It comes to its Growth in ten Years, and will live to thirty. *Pliny* relates several Stories, true and false, on this Subject. He will leap on board a Ship, usually attended with a Companion. These two Fish will make their Leaps so regularly, that they seem to be joined together. There are many of them taken in fishing for the *Tunny*. They are very good to eat, and yield abundance of Oil and volatile Salt. The Stomach, dried and powdered, is proper for Diseases of the Spleen, and the Liver for intermitting Fevers. The *Sea-Hogs* are made almost like the Dolphins, but they are not so little. The Fat of both is used to the same Purposes.

[This is the *Phocæna Rondeletii* Gesn. 838. *Phocæna seu Turic*, *Bellon.* It is a large Fish of the cetaceous kind, common in many Seas, but of no Use in Medicine.]

41. Of the Bone of the Cuttle-Fish.

THAT which we sell, and call the *Pomet.* Bone of the *Cuttle-Fish*, and the *Latins*, *Os Sepiæ*, is the Back of a Fish very common in the Ocean, and also in the *Mediterranean*. They are a very ugly Fish, and of a surprising Nature. They eat them in several Towns in *France*; as *Lyons*, *Bordeaux*, *Rochel*, *Nantz*, &c. The Bone of this Fish is of different Sizes, though the largest never exceeds half a Foot. The Bones are white, and hard on one Side, and soft on the other; for which Reason the Goldsmiths use them for casting. Some use the *Cuttle-Bone* to clean the Teeth with; but the main Use is for the Goldsmiths, and for those who cast *Venetian Lac*.

This Bone consists of a hard brown Shell on the Outside, with a thick, white, spongy, dry Pulp or Substance underneath it, which being rubbed between your Finger, will become a pure white, fine, subtil Powder, that being drunk in Water, helps the Asthma, and is good against Diseases of the Breast and Kidneys, expelling the Stone and Gravel, and curing a *Gonorrhæa*, taken for a considerable Time together. Outwardly applied, it helps Spots, Clouds, Films, Pearls, and other Impediments of Sights, and likewise dries up Rheums, and other watry Humours.

Sepia, the *Cuttle-Fish*, is a deformed *Lemery.* Sea Fish, resembling much a *Polypus*. The Covering of the Back is a Sort of Shell, Scale, or Bone, as broad as one's Hand, an Inch thick in the Middle, but thinner on the Sides, light, hard without, and spongy within, very white, and something of a saltish Taste. They call it *Os Sepiæ*, or *Cuttle-Bone*. The Goldsmiths

smiths use it for Moulds to cast Forks and Spoons in. This Fish carries under its Throat a Bladder, or Receptacle, full of an Humour that is blacker than Ink, which it discharges into the Sea, when pursued, to intercept the Sight of the Fishermen. It has two kinds of Arms, or Trunks, fixed to the Head, which serve it for swimming, and to take what it can catch. Besides these, it has six Feet which have Teeth on the upper Part of them, and two much larger underneath. It lives on small Fish, is good Meat, and brought to the Table in several Parts of *France*. As to its medicinal Use, it is deterfive, aperitive, desiccative, proper to take away Sports on the Face and Skin, to clean Teeth, provoke Urine, and bring away Stone and Gravel. Dose from half a Scruple to half a Drachm. The Eggs or Spawn of the *Cuttle-Fish* provoke Urine and the Terms.

[The *Cuttle-Fish* is the *Sepia Jonsf. Exang.* 7. *Rondelet.* 1. 498. *Loligo Sepia Merr. Pin.* 191.

The principal Use now made of the Bone is in Powders for cleaning the Teeth, tho' it is a good Diuretick and Detergent.

The black Liquor it has in a Bag in its Neck, is said to be a strong Purge, but I believe few have ever tried it.]

42. Of the Hermit-Fish, or Soldier.

Pomet. **T**HE *Hermit-Fish*, says *Father du Tertre*, is a kind of small Crab, of three or four Inches long, or more; one half of the Body of which is like a *Sea Locust*, or *Grasshopper*, but clothed with a Shell that is a little harder. It has four Feet, which are like those of a Crab, two Biters, one of which is not much bigger than one of the four Feet, and the other much broader than one's Thumb, that strangely shuts the Mouth of the Shell wherein it lodges. All the rest of the Body is a sort of Pudding, in a pretty rough thick Skin, as thick as one's Finger, and half the Length, or more. At the End is a little Tail, made up of three small Nails or Shells, like the Tail of a *Sea-Grasshopper*. All that Part is full of a Substance, like that in the Shell of a Crab, but red; which being exposed to the Fire, or set in the Sun, melts, and runs into Oil, which is a Balsam for fresh Wounds, which I have made Trials of on several Persons with good Success.

They descend once every Year to the Sea Coast; whether it is to wash, and to cast their Eggs, as the Crabs do, I know not: But this I know, that they go to change their Shells, which every one endeavours to find out according to his Size; and finding out what

may fit them, they run themselves backwards therein, and so cloath themselves a-new; and being armed like Soldiers with these foreign Shells, they march to the Mountains, and take up their Quarters among the Rocks and hollow Trees, living upon rotten Leaves and Fruit; among other things they sometimes feed on the *Manchineal Apple*, which so alters them, that instead of a wholesome Food, they become almost a Poison, encreasing in Bulk; and the Shell becoming too straight for them, by reason of their Growth, they are obliged to go down to the Sea-Coast to change their Houses. The Curious, who have made Observations of what happens during the Exchange, have ingeniously owned to me, they took a great deal of Satisfaction in the Sight; for they stop at every Shell they meet with, consider it diligently, and having met with one they believe for their Turn, they immediately quit the old one, and run themselves so swiftly backwards into the other, that one would think they were either afraid of the Injury of the cold Air, or ashamed to be seen naked.

Aristotle, who said that these Animals never fight, but for their Victuals, or when they couple, might have added, that they will fight for their Lodging; for if two of them meet at the same time stripped, to enter into one and the same Shell, they will bite each other, and battle it, till such time as the Weaker yields, and quits the Shell to the Conqueror, who having clothed himself with it, takes three or four Turns upon the Shore, and if he finds it does not fit him, he quits it again, and has immediate Recourse to his old one, and then seeks out for another; and thus they will change five or six times, till they meet with one for their Purpose. They carry in their Shells about half a Spoonful of clear Water, which is a sovereign Remedy against the Pustles and Blisters that the Droppings of the *Manchineal Tree* raise upon the Skin.

Cancellus is a sort of very small Craw-fish, called the *Hermit*, or *Bernard the Hermit*, because it retires from the others, and enters into the first Shell it meets which. The Figure of his Body is longish, but in Size of the Bulk of a Spider, only that it is a little larger. It carries upon its Head two little, slender, reddish Horns; the Eyes are raised, the Mouth is set with fine Hairs, that may be called a Beard. The two upper Legs are bent up again, and serve instead of Hands to reach to the Mouth, where it has Teeth. They are found near the Rocks, and are good Meat, several eating them after they are washed and boiled. They afford a great deal of volatile Salt, and are proper for Stone and Gravel, being aperitive.

In several of the *American Isles* they meet with a kind of *Cancellus*, or *Craw-fish*, that is much bigger than that I have been speaking of, and that is three or four Inches long, and called the *Soldier*, because he is clothed and armed with a foreign Shell. Those who would know further, may be satisfied from the Reverend Father *du Tertre*, who has writ concerning this Animal, [*as Pomēt has already taken Notice of.*] The Inhabitants of the Isles where this Fish is taken, make an Oil of them, by hanging them in the Sun, so that the Substance that melts from them makes an Oil of a Consistence as thick as Butter, and of a very foetid Smell; the Virtues of which are wonderful in rheumatick Pains, to which the Inhabitants of the Country are very subject. They sell this Oil very dear, because it is very scarce in *France*.

[The *Hermit-Fish*, or Foreign Heir, as he is called by some, is the *Cancellus Aldrov. de Exang. 218. Gesn. de Aq. 161. Cancellus quibusdam Bernhardus Eremita dictus Charlt. Ex. 58. Cancer in Testis degens. Merr. Pin. 192.*

The Ashes of this Fish are said to be a powerful Diuretick; the Oil which we have from *America* has been much used in Rheumatisms, but is almost neglected at present.]

43. Of the Sea-Crab and Craw-Fish.

Pomet. THERE are two Sorts of *Sea Crabs*, says Father *du Tertre*, which are commonly called *Homars*, which differ only in this, that the one Kind has two large Pinchers longer and broader than ones Hand, and very strong, and the others have none, but have two large Beards hairy like the Feet of a Crab, and as long as ones Arm; these grow to a vast Size, so that some are three Feet long. The Flesh is white and more relishing than the common *Crabs*, but it is harder, and not so easily digested. It is eat with Lemon Juice, Vinegar, and Pepper. They find them in the Night with Lights on the Sands, or stony Places, from whence the Tide is retired.

There are no Part of the *Sea-Crab* used in Medicine, but the black Tips of the Claws, called *Chelæ Cancrorum*, which are prepared either by Levigation or Calcination. The first is by beating them to a fine Powder, and grinding on a Marble with Rose-Water, or the like. The next Way is putting them in a Crucible, and burning them till they are white, and then reducing them into a fine Powder, as before. These Preparations are *Alcalies* in their Nature, and such as Physicians call a fixed *Alkali*. They cure Heart-Burnings, take away Sourness from the Stomach, absorb Acidities, and ease Pains in the Bowels, pro-

ceeding from sharp Humours. They are sometimes given with good Success in the Whites in Women and the *Gonorrhœa* in both Sexes. They are commended to cool, dry, cleanse, and discuss, and are good against Cholicks, salt Humours, &c.

As to the *Craw-Fish*, we sell nothing but certain little white Stones, made in Form of Eyes, from whence they take their Name, tho' very improperly, since they are nothing but little Stones which are found in the Head of the large *Craw-fishes*. These Stones, which are called *Crabs Eyes*, or *Oculi Cancrorum*, are never found but in *May* and *June*, which are at the Times that the *Craw-fish* leave their Shells. The *Craw-fish* or *Crevise Stones*, which we now sell at *Paris*, come from *Holland*: And, if we can believe a Physician of the *Poland* Envoy, who was a very honest able Man, and remained a long Time in *Holland*, he assured me, that what we sell now under the Denomination of *Crabs Eyes*, was nothing but a white Earth washed, and made into little Pastiles, and moulded with little Instruments made for that Purpose, with Holes of proper Sizes, to form it, and afterwards baked to a Dryness and sent over to us. To prove this, he assured me he saw two Persons at *Amsterdam*, who did nothing else but counterfeit these little Stones; so that now it is no longer doubted but the greatest Part of the *Crabs Eyes* made use of in the Shops is nothing else but an artificial Paste reduced to Powder. What I have to add to this, is, that there may indeed be Counterfeits of *Crabs Eyes*, as there are of almost all other Drugs, but we need not therefore conclude that all we sell are so, neither need the Quantities we receive of these Stones be objected as a Proof they are not genuine, for in the *East-Indies*, where the Fish which produce them breed them more abundantly than here, the Shores of Rivers are in some Places covered with them, and they are gathered up by Handsful, and it is from thence that the *Dutch* bring the Quantities they have. In *Silesia* they have also great Quantities of them, as also in *Poland*; and they are brought from *Dantzick*, *Hamburg*, *Denmark*, *Norway*, and *Swedeland*, and are found almost every where upon the Shore of the *Baltick Ocean*.

And what strengthens our Opinion of their being genuine, is, that in burning they blacken and calcine as all Bones and Shells do.

There are several Preparations of them, but the levigated Powder is only used, and that chiefly to absorb Acids, open Obstructions, and cleanse the urinary Passages of Gravel; to provoke Urine, and bring away the Stone, and other tartarous Coagulations: The whole Fish is also sometimes calcined in a Crucible and brought to Ashes, which

we

we sell. If they are rightly prepared, they ought to be yellow; for if they are of a black Colour, they are too much burnt, and good for nothing.

[The *Crab*, whose Claws is used in Medicine, is the common *Sea-Crab* the *Cancer Mæas Rond.* 1. 560. *Canceri Marini maximi apicibus Chelarum nigricantibus, Ind. Med.* 25. *Pagurus, Bellon. De Aquat.* 368. *Cancer Schon. Ichth.* 30. What we call *Crabs Eyes* are often adulterated, but the genuine are Stones formed in two Bags, one on each Side, of the Stomach of *Crabs, Craw-fish, Lobsters, &c.* and found in great Plenty on the Coasts of the *Baltick*. They are found in the Bodies of these Animals, only at certain Times of the Year, for in *June* and *July*, when they cast their Shells, there are none to be found in them, but a new Stomach being formed at that Time, as well as a new Shell, a milky Juice soon fills the Bags, out of which the Stones are formed.]

44. Of the Boutargo and Caviere.

Pomet. **B**Outargo, or Potargo, is the Spawn of a Fish, which the People of *Provence* call the Mullet, very frequent in the *Mediterranean*. The best is that which comes from *Tunis* in *Barbary*. It is likewise made at *Martegue*, eight Leagues from *Marseilles*. The reddest is most valued. They eat it on Fast-Days with Oil Olive and Lemon.

There is also a Stone found in the Head of this Fish, which is aperitive, and good for the Stone, the Dose is from half a Scruple to two Scruples.

The *Caviere*, or *Cavial*, which we have, comes from *Italy*, is made in several Parts of the *Levant* from the Spawn of a Fish, which some have assured me was the *Sturgeon*, which I shall not assert to be so, not knowing it positively. I shall only say this, that they eat a great deal of it in *Italy*, and but little in *France*, it not being so well known, no more than the *Boutargo*, especially at *Paris*.

Mugil, Cephalus, or the Mullet, *Lemery.* whereof *Boutargo* is made, is a Sea and River Fish, which has a great Head, from whence it is called *Cephalus*, which signifies a Head; the Muzzle is thick and short, the Body oblong, covered with Scales. They find a Stone in its Head, which is called *Echinus*, or *Spondilus*, because it is set with Prickles. This Fish is common in the *Mediterranean*; it swims with an extraordinary Swiftness, and gives some Disturbance to the Fishermen. It is good Meat, and yields Abundance of Oil and Phlegm, with some little volatile and fixed Salt. The Ventricle being dried and reduced to Powder, is proper to stop Vomiting, and strengthen the Stomach: This

Stone found in the Head is very aperitive, and proper to dissolve the Stone in the Kidneys and Bladder. The Dose is from half a Scruple to two Scruples. The Spawn of the Fish serves to make *Boutarg* of, which is usually eat on Fast-Days.

[The *Mullet*, the Spawn of which which makes *Boutargo*, is the *Mugil. Raii Ichth.* 214. *Cephalus Rond. de Pisc.* 1. 260.

Caviere is the Spawn of the *Sturgeon, Sturio Ald. de Pisc.* 517. *Sturio sive Silurus. Salv. de Aqu.* 113. prepared with Salt, Vinegar, &c. and is more properly a Food than a Medicine.]

45. Of the Shark.

THIS Fish is called by the *Spaniards Pomet.* *Phyburon*, by the *Dutch Hays*, and by the *French, Requiem*, because it devours Men, and so is the Occasion that *Dirges* are sung over them: It is in Shape very like the *Sea-Dog*, or *Hound-fish* described before. He is one of the most gluttonous Animals in the World; nothing comes amiss to him; tho' it be a Log of Wood he will swallow it, provided it be but greasy, for he swallows without chewing. He is furious and bold, and will throw himself to the Shore, and remain almost on the dry Land, that he may have the Opportunity of catching the Passengers. Sometimes he will bite at the very Oars with his sharp Teeth, for Rage and Madness that he cannot get at the Men which are in the Boat. There is found in his Head two or three Spoonfuls of Brain that is as white as Snow, which being dried, reduced to Powder, and taken in white Wine, is excellent for the Gravel. The Reverend Father *du Tertre* has made a long Discourse of this Animal, to which the Reader may have Recourse. Some have given the Name of *Tiberon* to this Animal, and others that of the Fish with two hundred Teeth; and he is so furious, that with one Bite he will snap off the Thigh of a Man.

Besides these Animals, and Parts of them whereof I have treated, we sell, tho' very rarely, the Bone of the *Shark's* Head, as also those of the *Crocodile, Carp, Perch, &c.* with the Jaws of the *Pike*; and, in *France*, the Druggists are permitted to sell all Sorts of Salt-Fish, either Wholesale or Retail.

Carcharias, Canis Marimus, or the *Sea-Dog*, *Lemery.* is an *American* Fish, that grows to a large Size, so as to be two Ton Weight. It is long and thick, covered with a rough Skin. The Head is very great, and like a Dog's; the Mouth long and broad, furnished with Abundance of triangular Teeth, that are hard and sharp. The Eyes are large and round, the Body cartilaginous, the Tail about

about a Foot and a half long, and forked; the Fins are great, it swims in the deep Sea, but sometimes enters into the Mouths of the Rivers to pursue its Prey; it lives on Fish and Flesh, but is very eager after that of Man. *Johnston* relates, that he found in one of these *Sea-Dogs* a whole Man. They are of several Sizes. Their Flesh is eat, but it is not good. The Skin is of great Use to several Artists. The Head contains in it two or three Ounces of Brain, that is very white. The Teeth are used to rub Children's Gums with, to make their Teeth cut.

[The *Shark* is the *Canis Carcharias*. *Ald. De Pisc.* 383. *Canis Carcharis seu Lamia Raii Isth.* 47. *Canis Aristoteli sive Carcharis Jonsf. de Pisc.* 13. The petrified Teeth of this Fish are what are called *Glossopetra*, they are hung by the good Women about Childrens Necks, in Imagination that they assist them in the Time of cutting their Teeth. They are also said to be cordial, alexipharmick, and sudorifick taken inwardly, but I believe few have tried them.]

46. Of Pearl.

Pomet. **T**HE *Pearls* are little round Bodies, or rough and roundish, that are found both in the Eastern and Western Seas. There are several sorts of them, which are more or less valued, according as they are large, round, and of a fine Water, and according the Place from whence they are taken, as the following Account from Mr. *Tavernier*, who in his Travels has made a curious Inquiry after them, will shew. These Pearls are found, says he, both in the East and Western Oceans. And though I have never been in *America*, yet as well for the Reader's Satisfaction, as that nothing may be omitted, I shall relate all the Parts where the Pearl Fishings are, beginning with those of the East. First of all, there is Pearl Fishing about the Isle of *Babren* in the Gulph of *Persia*. This belongs to the King of *Persia*, and therein is a good Fortrefs that entertains a Garrison of three Hundred Men. The Water which they drink in this Island, and that of the Coast of *Persia*, is like salt Water, and of an ill Taste, and what none but those of the Country are able to drink. As for Strangers, if they will have fresh Water, they must pay for it; being only to be had a League or two off, by putting to Sea five or six Persons in a little Vessel, and drawing Water with a Bottle from the Bottom of the Sea, where for about two or three Foot at the Bottom of the Water is sweet, and pleasant to drink. When they that dive to the Bottom of the Sea to draw up this Water have filled the Vessel,

and stopped it close, they give a Pull to a small Cord, which is tied to one of those in the Boat, which is the Signal to his Comrades to pull him up.

During the Time that the *Portuguese* were possessed of *Ormuz* and *Mascatè*, every Vessel that went out to fish, was obliged to take from them a Passport, that cost fifteen *Abassis*, and they kept always several Brigantines to sink such as refused. But since that the *Arabs* have retaken *Mascatè*, and that the *Portuguese* have no Forces upon the Gulph, every Man that fishes, pays only to the King of *Persia* five *Abassis*, whether he has Success in his Fishery, or catches nothing at all. The Merchant also gives some small Matter to the King out of every thousand Oysters.

The second Fishery of *Pearls* is opposite to *Babren*, on the Coast of *Arabia Fælix*, near the City of *Catifa*, which belongs to a Prince of the *Arabs*, with all the Country thereabouts. All the *Pearls* taken in those Parts are mostly sold in the *Indies*; because the *Indians* are not so difficult to be pleased as we, and will take the rough as well as the round. They likewise carry some to *Balsara*. Those that go into *Persia* and *Muscovy* are sold at *Bander-Congo*, two Days Journey from *Ormuz*. In all the Places I have named, and other Places of *Asia*, they admire the *Pearl* that is upon the yellow Water, more than the white, because they say the *Pearl*, with that Water, retains its Liveliness, and will not fade; but that the white will not last above thirty Years without losing its lively Colour; and not only the Heat of the Country, but the Sweat of the Person that wears them, will discolour them with an ugly yellow.

Before I leave the Gulph of *Ormuz*, I must beg leave to give an Account of that admirable *Pearl*, which the Prince of the *Arabs* had, who took *Mascatè* from the *Portuguese*, who took then the Name of *Imenest*, Prince of *Mascatè*, but was called before that, *Acph Sen Ali*, Prince of *Nor-nuæè*. It is no other than a petty Province, but the best of all the *Arabia Fælix*. There grows every thing that is necessary for human Life, but particularly the finest Fruits, and especially Grapes, whereof they may make excellent Wine. This Prince had the finest *Pearl* that was in the World; not for its Size, for it weighed not above twelve Carats, or its perfect Roundness; but because it was so clear and transparent, that you might almost see clearly through it. As the Gulph over-against *Ormuz* was not above twelve Leagues over from the *Happy Arabia* to the Coast of *Persia*, and the *Arabs* were at Peace with the *Persians*, the Prince of *Mascatè* came to pay a Visit to the *Kan* of *Ormuz*, who treated him very magnificently, and invited to his Entertainment, the *English* and
Dutch,

Dutch, and several other *Europeans*, of which Number I was one. When Dinner was over, the Prince took this *Pearl* from a little Purse that hung about his Neck, and shewed it to the *Kan* and all the Company. The *Kan* would have bought it, for a Present to the King of *Persia*, and offered him to two Thousand Tomens, but it would not do. Since that, I passed the Sea with a *Banian* Merchant, which the Great *Mogul* had sent to that Prince to offer him Forty Thousand Crowns for that *Pearl*, which he would not take. This Story lets us see as to what relates to Jewels; those which are fine are not always brought into *Europe*, but rather carried out of *Europe* in *Asia*; because in all those Parts, they set a great Price upon precious Stones and Pearls that are of an extraordinary Beauty, except in *China* and *Japan*, where they do not mind them at all.

The next Place, in the Eastern Parts where there is a Fishery of *Pearls*, is in the Sea that beats upon a large Town, called *Manar*, in the Isle of *Ceylon*. These are the finest for their Water, and their Roundness, of all the other Fisheries, but there are rarely any found that exceed three or four Carats Weight. There are, moreover, upon the Coast of *Japan*, *Pearls* of a very fine Water, and very large, but uneven or rough; but they never fish for them, because, as I have been saying, the *Japoneze* do not value Jewels. Although the *Pearls* which are found at *Bahren* and *Catifa* are a little upon the yellow, they will yield as good a Price as those of *Manar*, as I have observed; and throughout all the East, they allow they are then come to their full Maturity, and will never change Colour.

I come now to the Western Fisheries, which are all in the great *Gulph* of *Mexico*, along the Coast of *New Spain*, and they are five in Number, lying in Order, from the East to the West, as follows. The first is along the Isle of *Cuba*, which is not above three Leagues about, and five, or thereabouts, distant from the *Terra firma*. It is in six Degrees and a half of Northern Latitude, and one Hundred and sixty Leagues from *St. Domingo*, in the Isle called *Hispaniola*. This is a very barren Soil, and wants every Thing, especially Water, which the Inhabitants are obliged to fetch from the *Terra firma*. This Island is famous in the *West-Indies*, because it is the Place where there is the greatest Fishery of *Pearls*, though the largest of them, exceed not five Carats Weight.

The second Fishery is in the Isle of *Margarit*, that is to say, the Isle of *Pearls*, a League from *Cuba*, which it very far surpasses in Bigness. It produces every Thing necessary for Life, only that it wants Water as well as *Cuba*, and they

are forced to bring it from the River *Cumana*, near *New Cadiz*. This Fishery does not yield the most Plenty of all the Five that are in *America*, but is esteemed the Chief, because the Pearls which are found here excel the other in Goodness, as well for their Water as their Bigness. One of these last, which I have had in my Possession, being shaped like a Pear, and of a fine Water, weighed fifty five Carats, and I sold it to *Cha Est Kan*, Uncle to the Great *Mogul*. Several Persons are surprized, and wonder why we should carry Pearls out of *Europe* into the *East-Indies*, where they have so many: But they should take Notice that in their Fisheries of the East, they do not meet with such large ones as in the West; adding to this, that all the Kings and great Lords of *Asia*, will give a greater Price than those in *Europe*, not only for Pearls, but all sorts of Jewels, that have any Thing excellent in them, except Diamonds.

The third Fishery is at *Comogota*, pretty near the *Terra firma*. The fourth is at *Rio de la Hacha*, along the same Coast. The fifth and last is at *St. Martha's*, about sixty Leagues from *Rio de la Hacha*. All these three Fisheries produce pretty large *Pearl*, but for the most Part they are ill shaped, or irregular, and of a black or leaden Water. As for the *Scotch Pearl*, and those found in one of the Rivers of *Bavaria*, though there have been Necklaces of them valued at a Thousand Crowns and upwards, yet they are not to be equalized with the oriental or occidental *Pearl*. Of later Years there has been a Fishery discovered in a certain Part of the Coast of *Japan*, and I have seen some of the *Pearl* which the *Dutch* have brought from thence, that have been of a fine Water, and large, but irregular.

Before I finish this Chapter, I will give you a Remark worth Consideration, in Relation to *Pearls*, and the Difference of their Waters; some being very white, some inclining to yellow, and others upon the black, which are, as it were, of a leaden Colour. As to these last, they are met with nowhere but in *America*, and their Colour comes from the Nature of the Soil, which is fuller of Mud than that of the Eastern Parts. In the Return of the Cargo which the *Sieur du Jardin*, the famous Jeweller, had in the *Spanish Galleons*, there were six *Pearls*, perfectly round, but as black as Jet, and which, one with another, weighed twelve Carats each. He gave me these, among other Things, to carry to the *East-Indies*, and see if I could dispose of them; but I brought them back again, and could meet with no Body that would look upon them. As to the *Pearls* which are inclined to yellow, that comes from hence, that the Fishermen selling the Oysters in Heaps, and the Merchant

chant staying sometimes fourteen or fifteen Days before they open, to take out the *Pearl*; some of these Oysters, during this Time, lose their Liquor, which wastes and stinks, and the Pearl becomes yellow from the Infection; which is so true, that in all the Oysters that keep their Liquor, or Water in them, the *Pearls* are always white; but they wait till the Oysters open of themselves; because if they should open them by Force, as we do ours here, they would endanger the damaging and splitting the *Pearl*. The Oysters of the *Streights* of *Manar*, open naturally five or six Days sooner than those of the *Gulph* of *Persia*, because the Heat is much greater there, which is in the tenth Degree of Northern Latitude, than in the Isle of *Babren*, which is in the twenty-seventh; and therefore among the *Pearls* that come from *Manar*, there are but few yellow ones. In short, the People of all the Eastern Countries are much of our Minds, in relation to Whiteness; for I have always made it my Observation, that they love the whitest *Pearl*, the whitest Diamonds, the whitest Bread, and the fairest Women.

Margaritæ, Uniones, vel Perlæ, Pearls, Lemery. are little Stones almost round, oval, or shaped like Pears, compact, hard, smooth, white, shining, and of different Sizes, which are formed in certain Oysters, whose Shells are of different Bigness: But there some of them met with that are three or four Times as big as the *Rouen* Oysters. They fish for these Pearl Oysters in the Eastern and Western Ocean, as you may see at Length in Mr. *Tavernier's* Travels. The Antients called these Pearls *Uniones*, because they believed there never was but one in an Oyster; but they were deceived, for we sometimes find seven in a Shell. They are bred from a viscous, or saline, glutinous Humour, that is condensed and petrified in several Parts of the Fish. Instead of a particular Part being assign'd for the Generation of *Pearl*, they breed indifferently in all the Parts of the Oyster, but are most commonly found in the largest and best shaped Oysters rather than in others; these Oysters are as good to eat as the common Sort. Sometimes we meet with Pearl in Muscles, and other Shell Fish, as well as in Oysters. All *Pearl* is esteemed cordial, proper against Infection, to recruit and restore lost Spirits; but their chief Virtue is to destroy Acids, as other Alcalies do, and likewise to correct the Acrimony of the Stomach. *Pearl* is likewise good against a canine Appetite, a Flux of the Belly, the Hemorrhage, &c. The Dose from six or ten Grains to a Drachm.

VOL. II.

47. The Manner of the Pearl breeding in the Oyster.

I Know, that on the Authority of several antient Authors, that were not well informed in the Nature of Things, it is commonly believed that *Pearl* is bred from the Dew of Heaven, and that there is never above one in a Shell; but Experience has let us see the contrary: For as to the first, the Oyster never stirs from the Bottom of the Sea, where the Dew can never come; and as to the other, it is certain that there are found from six to seven *Pearls* in a single Oyster; for I have one in my Hands, where there are ten *Pearls*, that were in the Course of Formation. It is true, they are not all of the same Size, for they breed in the Oyster just as Eggs in the Belly of the Hen; for as the largest Egg advances first to be excluded, the least stay behind, till they have acquired their Bigness; so the largest *Pearl* advances first, and the other less, not having attained to their Perfection, remain under the Oyster at the Bottom, till they are grown to the Size that Nature has appointed for them; but we cannot say there is a Pearl in every Oyster, for there are several opened in which there are none at all.

The Pearl-Fishing in the *East-Indies* is twice a Year; the first is in *March* and *April*, and the second in *August* and *September*; and the Sale of them is from *June* to *November*. The People are so poor, and live so miserably along the Coast on the *Persian Gulph*, that they must starve but for this Fishery, for they have neither Bread nor Rice, and eat nothing but Dates and Salt-Fish; and they must go twenty Leagues in the Country before they can meet with a Plant. The more Rain there falls in a Year, the better the Pearl-Fishing is. Many have imagined, that the deeper in Water the Oyster is found, the Pearl therein is the whiter, because the Water is not so hot, and the Sun finds greater Resistance to get to the Bottom; but that is only a groundless Fancy. They fish from four to twelve Fathom deep; and this Fishery is upon the Banks, where there are sometimes Two hundred Barks, or little Vessels, at a Time, in most of which there is not above one Diver, or two at most.

These Boats go off every Day from the Coast before the Sun rises, with a Land-Breeze, which lasts till ten a Clock in the Morning, and in the Afternoon they return with the Sea-Breeze, that constantly, about eleven or twelve at Noon, succeeds the other. The Banks upon which they fish, are five or six Leagues out at Sea, and when they come there, they fish thus for the Oysters:

I,

They

They tie a Cord under the Arms of those that dive; of which those that remain in the Boat take hold of the End. They tie to the great Toe a Stone of eighteen or twenty Pounds, of which those that are in the Boat take hold also by a Cord. They have besides a Net made like a Sack, whose Mouth is made round like a Circle, that it may keep open, and this Net is tied like the rest. Then the Diver goes down into the Sea, and as soon as he is at the Bottom, where he is quickly by the Weight of the Stone, he nimbly unties the Stone, which those in the Boat draw up again. As long as the Diver can hold his Breath, he put the Oysters into the Net, and when he finds he can hold no longer, pulls the Cord that is tied under his Arms, which is the Signal that he would come up, and those that are in the Boat draw him up as quick as possible. Those at *Manar* are more expert at fishing, and stay longer in the Water than the Fishermen of *Bahren* and *Catifa*, for they put nothing in their Noses or Ears to keep out the Water, as they do in the *Gulph* of *Persia*.

After they have drawn up the Diver into the Boat, they take about half a Quarter of an Hour's Time to empty the Net of the Oysters. In the mean while the Diver recovers his Breath, and then returns to the Bottom of the Sea, as before; which he does several Times for ten or twelve Hours together, and then returns to Land. To conclude this Discourse of Pearl, we ought to observe, that throughout *Europe* they sell by the *Carat*, which is four Grains, as well as that of the Diamond Weight; but in *Asia* they use several Weights. In *Persia* they weigh Pearls by the *Abas*, and an *Abas* is an Eighth less than our *Carat*. In the *Indies*, especially in the Great *Mogul's* Countries, and in the Kingdoms of *Golconda* and *Visapour*, they weigh by the *Ratis*, and that is also an Eighth less than the *Carat*.

Goa was formerly the Place where the great Trade of *Asia* lay for Diamonds, Rubies, Sapphires, Topazes, and other precious Stones. All the Miners and Merchants came here to sell whatever was fine from the Mines, &c. Here also was the great Commerce of Pearls from all Parts of *Asia*, as also of those from *America*. As for *Africa*, this Sort of Traffick is unknown to them, because the Women there are contented with Pieces of Chrystal, or some Grains of false Coral, Glass Beads, or yellow Amber, to make Necklaces and Bracelets of. As to the Pearl we usually sell, called *Seed Pearl*, which is for medicinal Uses, being proper to reduce into Powder by the Mortar or Muller, it ought to be white, clear, transparent, and true Oriental, rejecting all other Kinds, espe-

cially the *Scotch* or *Brussels Pearl*, being nothing but an artificial or counterfeit Sort. The Use of Pearl is to put in Potions, or other Cordial Compositions. The Ladies of Quality use the fine ground Powder of it, to give a Lustre and Beauty to the Face. They make of it likewise, with Acids, &c. a Magistery and Salt, to which they attribute large Virtues; besides other imaginary Preparations; as the *Arcanum* of Pearl, the Flowers, Spirits, Essences, Tinctures, and the like, to pick Fools Pockets; but the best and only useful Preparation of it, is the Powder well levigated.

[*Pearls* are a morbid Excrescence from the Shells they are found in, of a stony Substance, and consisting of several *Strata*, like the *Bezoar* and other Animal Stones, and have no other Virtues however extolled than those of the Shell they are bred in.

The *Scotch Pearls* are found in the common Oyster, and are often as big as a small Pea, and sometimes, though seldom, larger.

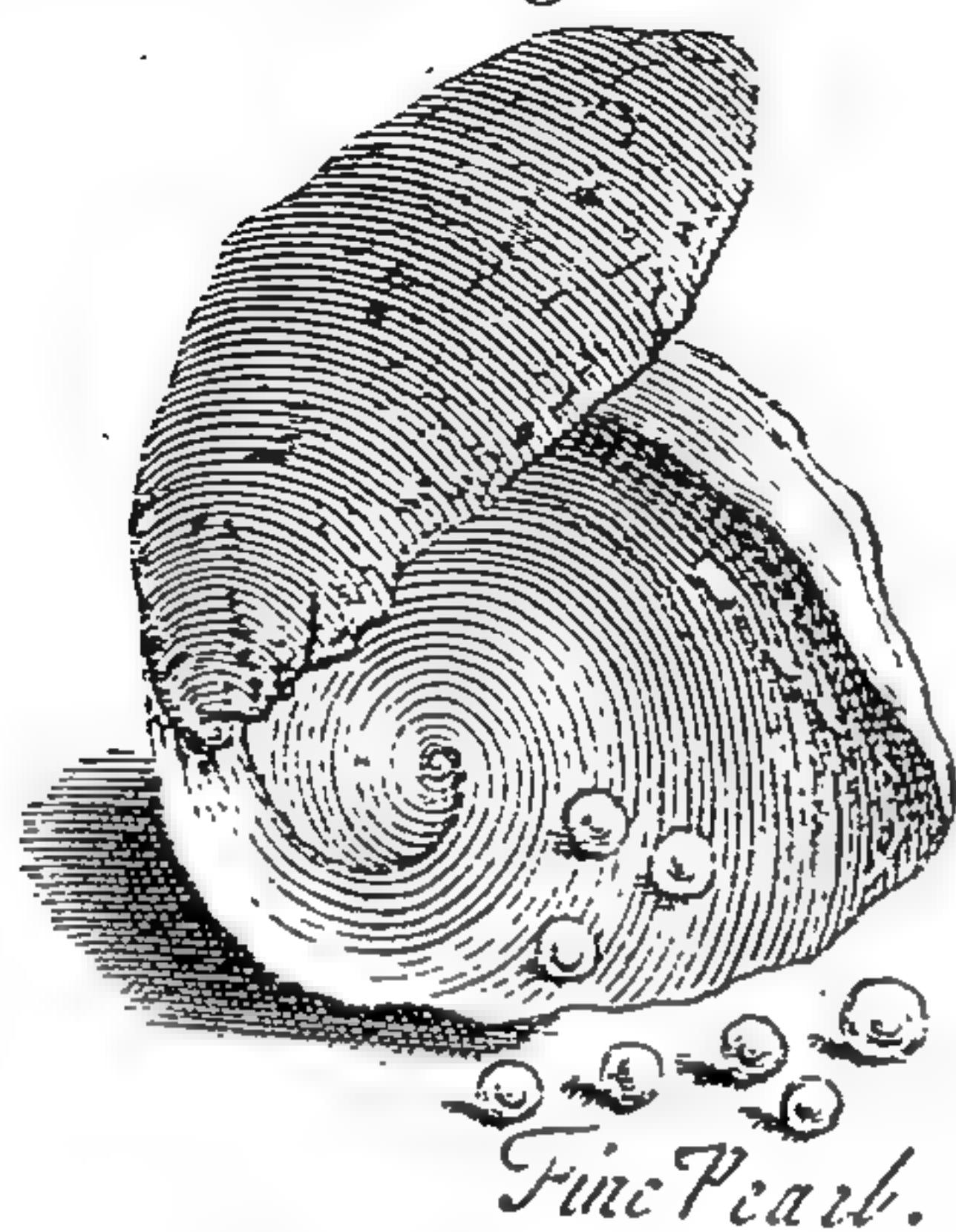
The oriental and occidental Pearls, of which the former are most esteemed, and of those, especially those of *Ormus*, are found in the *Concha Margaritifera plerisque Berberis antiquis Indis dicta*. *List. Hist.* and in Oysters and Muscles, of many Kinds.]

48. Of Mother of Pearl.

WE bring to *Paris* great greyish Shells *Pomet.* that are rough and uneven on the Outside, and of a white, inclining a little to be greenish within, which they call, though improperly, by the Name of *Mother of Pearl*; not because the Pearl is bred in them, as a great many People believe, but because they are on the Inside of the Colour and Water of oriental *Pearl*, as they are also without, when they are prepared with *Aqua Fortis*. These Shells serve for several Sorts of fine Works: And as they are alkaline and approach to the Virtues of Pearl, a great many People preserve and grind them into Powder, after which they form them into Troches, and sell them for prepared *Pearl*.

The *Mater Perlarum* or *Nacre de Perles*, in English, *Mother of Pearl*, is a *Lemery.* kind of Oyster, of which there are several Sorts that are within of the Colour and Beauty of the oriental *Pearl*. I have preserved by me one of these Shells that weighs seventeen Ounces, and is as broad as both my Hands. Chuse the whitest, and of the best Lustre. They make of these Shells Snuff-Boxes, and a great many other fine polished Works, that are neat, smooth, and

True Mother of Pearl.

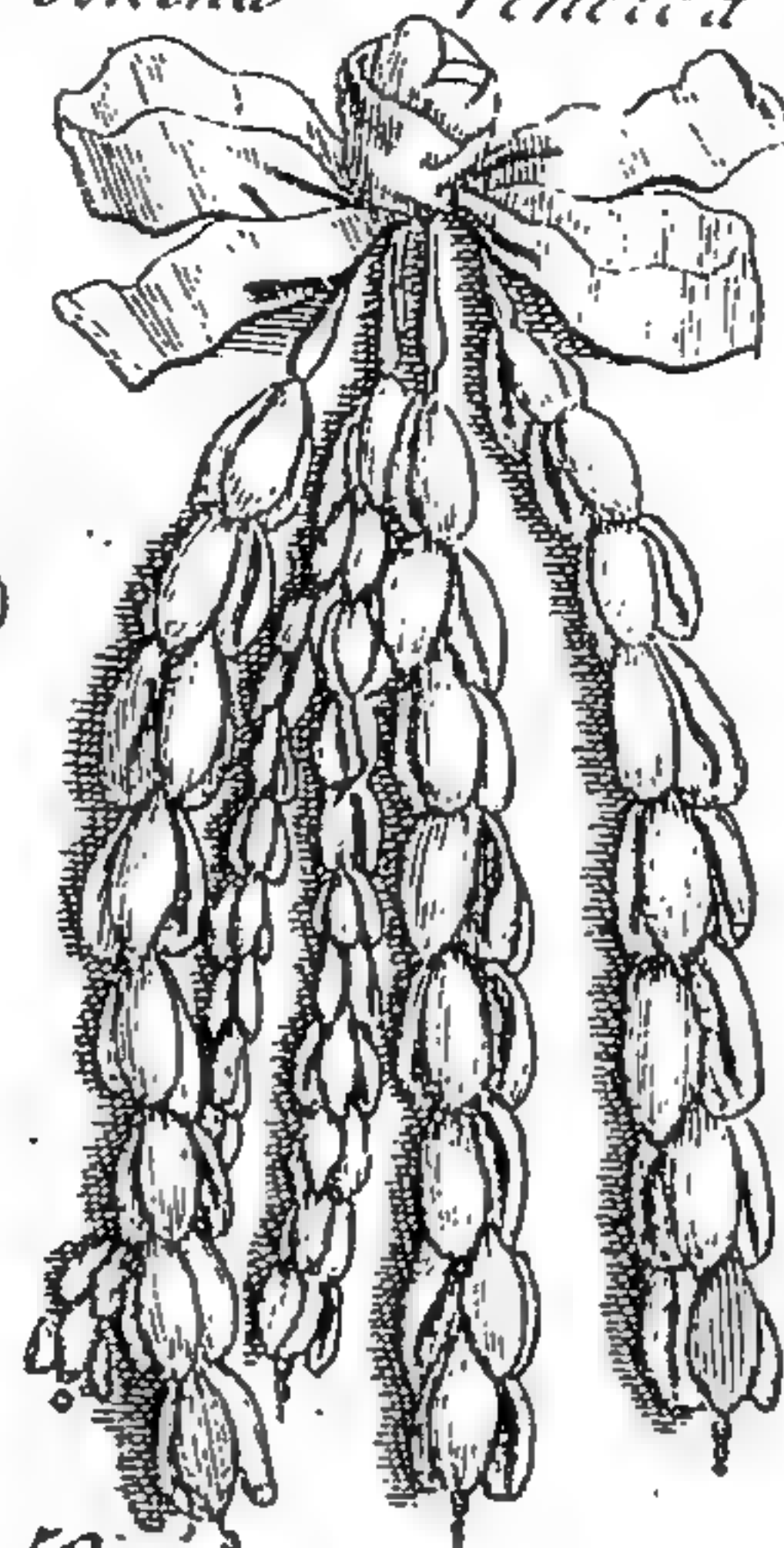


48

False Mother of Pearl.



The Shell of y Sea Snail
or Concha Venerica.



49

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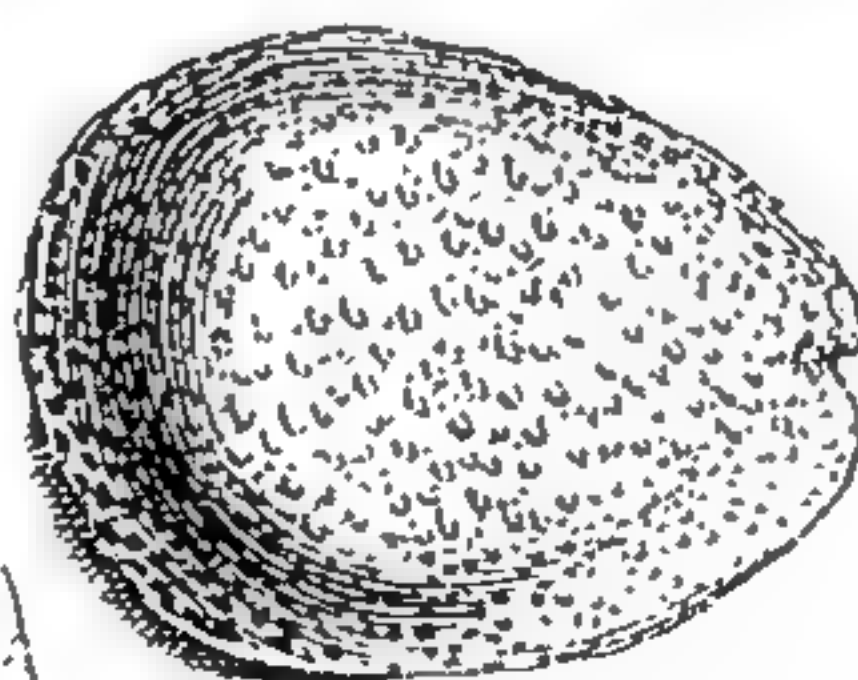


Fine Pearl.

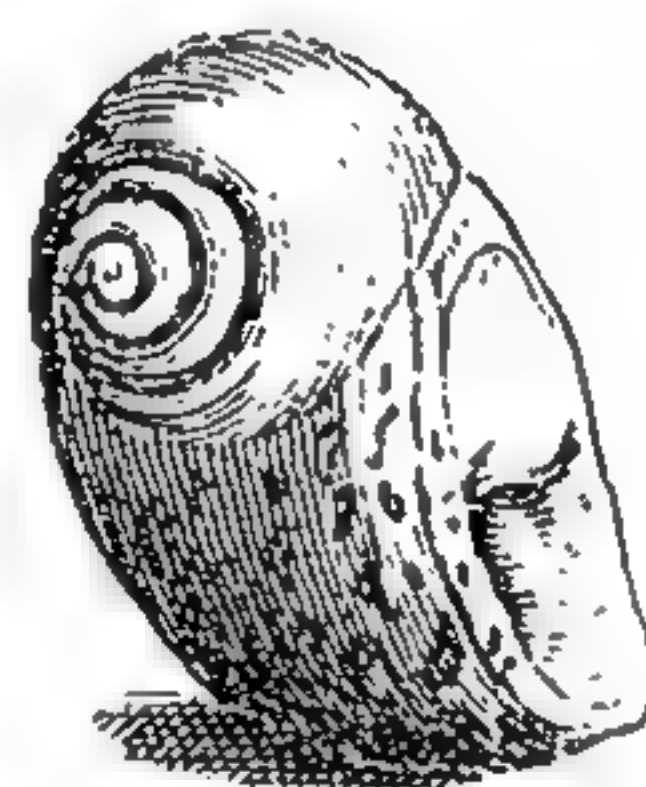
Small Sea snail
shells.



Great Sea snail shell.

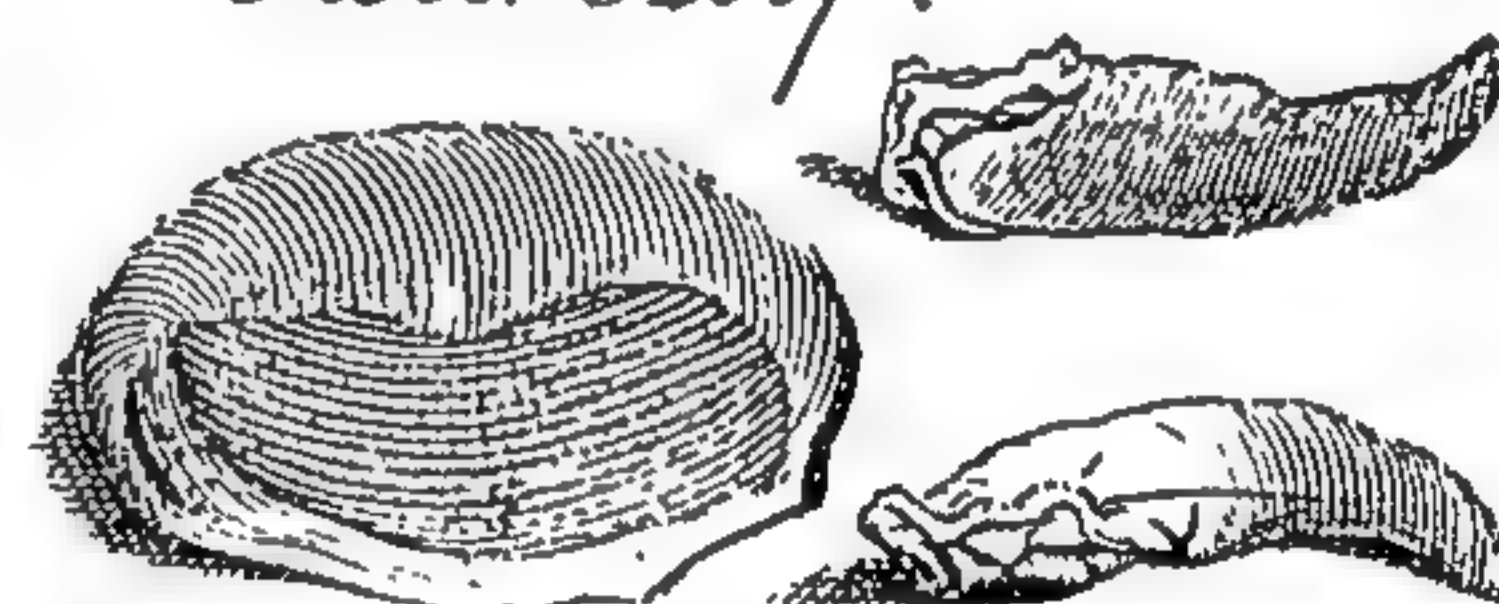


52
The Nerita.



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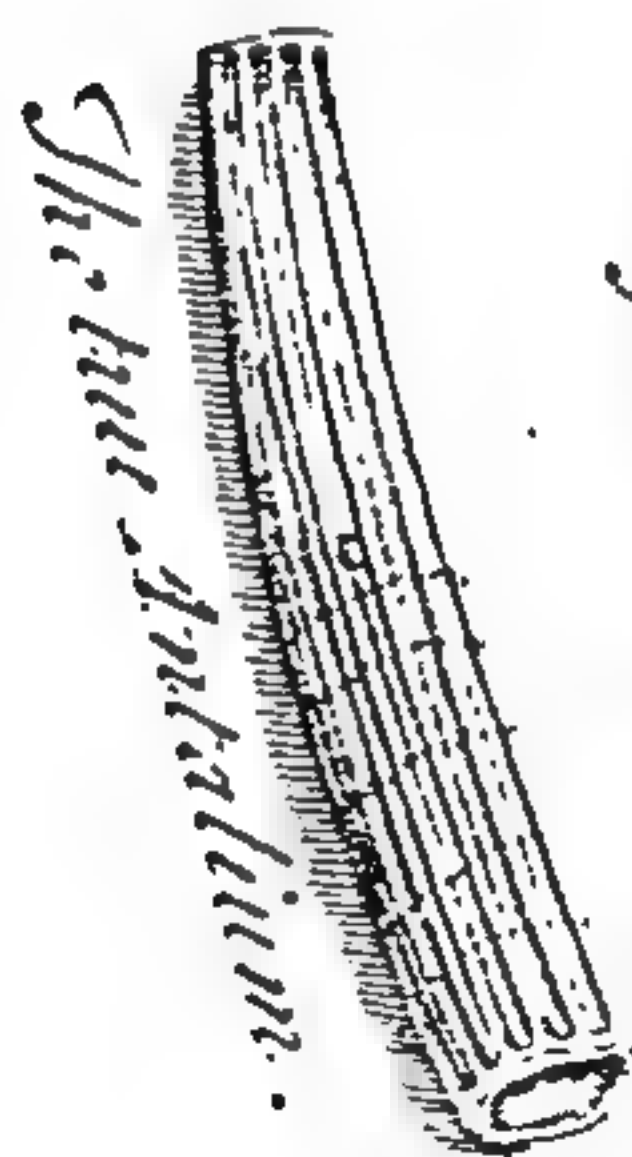
Sweet Hoof.



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51



and very agreeable to the Eye. And likewise grind it to Powder on a Porphyry, and it is used by the Women amongst their Pomatums, for a *Fucus* to beautify the Face.

[The *Mother of Pearl* is the *Concha Margaritifera*, *Mont. Ex. 6. Bellon. Aq. 202. Concha Mater Unionum*, *Rond. Aq. 2. 33. Concha Mater Unionum dicta, sive Margaritifera*, *Bonan. 93. 11. n. 1.* It is one of the many Shells in which *Pearls* are found. It is as good an Alkali as the rest of the same Class, and though not often prescribed, is very often used, being generally a *Succedaneum* for the true *Pearl*.]

49. Of the Shell of the Sea Snail, called *Concha Venerea*.

Pomet. **W**HAT we call the *Porcelain*, or *Sea Snail Shell*, and the *Latins*, *Concha Venerea*, is the little white Shell that is brought from several Parts of the *East* and *West-Indies*, hung in Strings in the Nature of Beads, and brought to us in Bunches; so that in a Parcel where there are several of these Bunches, there are more than a Thousand of these little Shells. The *Siamois*, *Arovargues*, and the People of *New Spain*, use these little Shells as we do Money here. They are used in Powder with us as *Pearl*; chuse the least and the whitest. There are several Sorts of them described by *Johnston*, but we have only given the Figure of one, which is the Kind kept by the Druggists. It was once an Opinion, that the fine *China Ware* was made of these Shells, &c. but it is now known to be made of an Earth; though the Manner of Painting it, and other Particulars, are yet a Secret.

Concha Venerea, Porcelaine, or Puce-Lemery. *lage*, is a little *Sea Snail Shell*, something larger than a Pine Kernel, longish, white, and smooth, which is brought us from the *Indies*, strung several together like Beads. They serve the Natives there for Money. They make a better white than *Pearl*, and are used in Paint for the Face. Besides which, they are alkaline, and a good Sweetner of the Blood, but are not much used in Physick.

[The *Porcelaine*, or *Money Shell*, is the *Concha Venerea, Conchula Cytheriaca*, *Mont. Exot. 6. Venerea in Mari Siculo et Tarentino frequens, ubi vulgo vocatur Porcelletta*. *Bonan. 145. n. 251.* It is an Alkali, like the rest of the Testaceous Kind, but never used in Medicine.]

50. Of the *Dentalium*, or Dog Tooth-shell.

Pomet. **T**HE true *Dog Tooth-shell*, or *Dentalium*, not *Dantalis*, as it is com-

monly called, is a kind of Pipe of about three Inches long, thick at one End, and small at the other, made like a Dog's Tooth, of a greenish shining White, adorned with straight Lines that go from one End to the other. It is hollow, and light, of the Size of a Quill at the thick End, and smaller by Degrees, to the other End.

This true *Tooth-shell* is so rare, that it was never rightly described by any one; and if it were not that Mr. *Tournefort* has given me one, the Figure of which is engraved in Plate 86, I should have been obliged to pass it over in silence, and say, with *Schroder* and others, that it was that small hollow Pipe of several Colours, which is very commonly found on the Sea Side, and sold in the Shops for the true *Dentalium*, and which the Apothecaries improperly use as such in several *Galenical* Compositions. Several likewise use a Bone from the Head of a Sea Fish for the true *Tooth-shell*. As to the Virtues of this, it is an Alkali, to be used as other testaceous Powders.

[The *Tooth-shell* is the *Dentalium*, *Mont. Exot. 6. Dentale lævum, album, altera extremitate rufescens*, *List. Hist. Conch. 4. Sect. 11. n. 2. Tubulus Dentalis lævis*, *Lang. Meth. Test. 5.* It is found in the *British Seas*, and is of an oblong, slender, cylindrical Shape, something crooked, and open at both Ends. It has been made an Ingredient in many Compositions, but is very little used at present.]

51. Of the *Antalium*, or *Entaglia*.

THE true *Antalium* is as little known *Pomet.* as the former, since the Apothecaries constantly, for the true *Antalium*, use a hollow Pipe, of different Colours and Sizes, not exceeding, however, that of a large Quill. These Pipes are found at the Bottom of the Sea, and upon Rocks, sometimes separate, and sometimes several of them together; they serve for several little Sea-Worms to creep into. And several Authors, especially *Rondelet*, an eminent Physician of *Montpelier*, calls these Pipes, *Tubuli Marini*. I shall not stop here to relate the long Discourse of *Renou* in his Book, but affirm, according to Mr. *Tournefort*, who is a Man of the greatest Perspicuity, as well in Plants as Shells, that *Europe* has bred these many Years, that the true *Antalium* is another sort of Pipe, which grows likewise at the Bottom of the Sea. This Pipe is about an Inch and a half long, and the Bigness of a large Quill at the thick End, and that of a little Quill at the other. It is hollow and thick at one End, and slender at the other. As to the Colour it is always white,

white, but differently so, being found of a greenish white, and a more unpolished white, &c. As to the Choice of these two Pipes, there is no other than to take the true; for the Virtue of the *Antallium* is nothing different from that of the *Dentalium*, they being both Alcalies and Driers.

[The *Entaglia* is the *Entallium*, *Charlt. Ex.* 63. *Tubulus dentalis stratus*, *Lang. Meth. Test. Tubulus aut Siphunculus maris. Bonan.* 91. It is like the Tooth-shell, but longer and thicker, of a greenish Colour, and striated. It is brought to us from the *East-Indies*, and possesses the Virtues of the former, and other testaceous Substances, but is very little used.]

52. Of the Umbilicus-Marinus.

Pomet. **W**HAT the *Latins* calls *Umbilicus Marinus*, i. e. *Sea-Navel*, is the Covering of a Sea Snail, that is very common in the *Mediterranean*, which *Rondelet* calls *Cochlea cœlata*. This Lid is tied to one End of the Fish, and when it retires into its Shell it draws after it the Lid or Covering, which shuts the Mouth of the Shell so exactly, that the Sea-Water cannot enter. *Rondelet* informs us, with good Reason, that the true *Umbilicus Marinus* is a Shell very different from this Covering, which he describes in the 38th and 39th Chapters of the same Book; but Custom has decided this Controversy in Favour of his Covering, which must be used when the *Umbilicus Marinus* is prescribed: It is of different Sizes. That which is most frequently seen is not much broader than a Farthing, and of about the Thickness of a Crown-Piece. It has its Denomination from the Similitude it bears to that Part, of which it bears the Name. It is flat on one Side and convex on the other, and of different Colours, the flat Side being sometimes whitish, but commonly of a mottled brown, and the convex Side, white with a Mixture of yellowish or reddish. Some instead of this, tho' it is not very scarce, use the Shell of a Sea-Snail called *Nerita*, of which Mr. *Tournefort* gives the following Account.

The History of the *Nerita* is very confused in both antient and modern Authors. But that which *Rondelet* takes for the *Delian Nerita*, is a kind of Sea-Snail that is found in the *Mediterranean*, and which the Waves cast upon the Sands in the same Places with the *Solen*. These Snails are as big as the Land-Snails, and pretty like them in Shape; but they are much thicker, smother, and usually redder within: Outwardly they are met with of different Colours. *Rondelet* says, that the Sort he speaks of are marked or spotted with Black, but this Kind is scarce. I have seen some all white,

others that have been of a Rose-Colour, and several other Varieties. Those also which *Bellonius* describes resemble the Figure of those of *Rondeletius*, but he has not mentioned their Colour. He says they are called *Bigomet*, or *Bigorneau*, in *Bretagne*, and *Virlis* at *Paris*. Besides the *Nerita* some Apothecaries use, instead of the *Umbilicus Marinus*, a small Plant, whose Leaves are round and thick, which the Antients called *Cotyledon*, or *Umbilicus Veneris*, Navelwort, because the Leaves pretty much resemble the Shape of the Navel. This Plant is pretty scarce at *Paris*, but very common in *Languedoc*. But the Thing which ought to be used where *Umbilicus Marinus* is ordered is the *Operculum* of the Shell-fish before mentioned.

[The *Umbilicus Marinus* is the *Operculum* of the *Cochlea trichiformis, striata, rugosa, papillosa. Lang. Meth. Test.* 51. *Cochlea cœlata, Aldr. De Exang.* 393. *Cochlea cœlata, Antonomastice dicta, Bonan.* 114. It is common in the *Mediterranean*. It has the Virtues of the other Testacea, and has been used to be hung about Childrens Necks, and as a Preservative against the Cholick.]

53. Of Sweet-Hoof.

THE *Unguis Odoratus*, or *Sweet-Hoof*, *Pomet.* is likewise the Lid or Cover of a certain Shell-fish called *Conchylium*; this is of different Sizes; but for its Shape it resembles the Claws of some Animals. It is thin, of a brown Colour, easy to burn, and of an unpleasant Smell, like that of Horn, which is quite contrary to its Name; and I cannot understand what Reason the Antients could have to call it *Unguis Odoratus*, as well because it has no Resemblance to Hoofs, if it has any to the Claws or Talons of any Animal, as because the Scent is so far from being agreeable, that it is very stinking. *Dioscorides* calls this Covering *Unguis, sive Onyx*: This Covering, says he, is like to that of the Purple-fish. That which is found in the Lakes of the *East-Indies*, amongst the Spikenard, is of a very pleasant Smell, because the Fish to which it belongs feeds on this Plant. This Author prefers that which comes from the *Red-Sea*, to that which is found on the Coast of *Babylon*, which is blackish, and much less. They burnt in his Time one and the other for the Vapours, because, says he, the Smell comes near to that of *Castor*; which confirms what I have said, as the Smell of *Castor* and the other are both very disagreeable: Wherefore it should no longer be called *Unguis Odoratus*, but only *Blatta Bizantia*, that is, of *Constantinople*. As this is very scarce, they substitute in its Place the *Solen*, both Male and Female, whereof this which follows is the Description.

[The

[The *Constantinople Sweet Shell* is the *Blatta Byzantina Arabum*. *Ald. De Exang.* 346. *Operculum cochlearum marinaram subrotundum vulgare*. *Lang.* 56. It is of an oblong Figure, a tough Consistence, and disagreeable Smell, and serves as a Cover to a kind of Murex or Purple-fish.

It is the general Opinion, that this and the *Unguis Odoratus* are the same; but whoever will carefully read *Dioscorides*, will find them to be two entirely different Things, and that the true *Unguis Odoratus* was not an *Operculum*, but a Shell-fish, found in the Lakes, made by the Overflowings of the *Ganges* in the *East-Indies*; it was probably of the *Pectunculus* Kind, and named *Unguis* and *Onyx*, from the Resemblance to the Nail of the human Finger. We need not therefore wonder, with our Author, at the Name, as not suiting what is now sold under it, as it certainly was never intended for it.]

54. Of the Solen, or Finger-Shell:

Pomet. THIS is a Shell of two Pieces, that are joined together at one End, from four to five Inches long, and from seven to eight Lines in Breadth, hollow like a Spout, arched above, thin, square at the Ends; and which, when joined together, are like a small Trunk, or one of those Cases wherein they put a Knife and Spoon for the Table. *Rondelet* calls the Male *Solen*, that whose Shell is bluish, or of a Slate-Colour, and this is agreeable to *Apuleius's* Sentiment; and he calls the Female *Solen*, that which has the white or russet Shell, and which is generally less than the other. These two Species are very common in the *Mediterranean*. I have gathered them upon the Sands in the Isles of *Hieres*, and on the Coast of *Martignes* in *Provence*, and in *Languedoc*, on the Coast of *Perant* and *Cette*. They meet with, besides, a kind of *Solen* on the Coast of *Normandy*, whose Shells are white, inclining to purple; but they are thicker than those of the *Mediterranean*, and about seven Inches long, and an Inch broad.

Together with these Shells aforementioned, we sell the Inside of the Oyster-shells, after they have been calcined to a Whiteness, and made into Troches. It is observable, that it is difficult to preserve or keep those Troches whole, because they fall into Powder like Lime. Oyster-shells calcined make very good Lime, which is the Reason why the *Dutch* use nothing else. Some Authors, as *Ettmuller*, in a Treatise of his of Animals, say, that the Oyster-shells burnt are very proper to cure pestilential Buboes, being applied upon them: He observes, likewise, that they serve instead of Pearl. Besides these Shells there are Abundance of others, which I have not mentioned for three Reasons: The first, because they are not used. Secondly, because I have little or no Knowledge of them. And, in the third Place, because Mr. *Tournesfort*, who has the compleatest Knowledge of these Curiosities, designs, in a little Time, to give the Public an exact Account of them.

Solen, Daetylus, vel Digitus, or the Finger-Shell, because of its Resemblance *Lemery*, to a Finger, is a small Shell, something larger than one's Finger, and an Inch thick, made up of two Pieces like the Muscle, but joined together at the End, and hollow like a Pipe. This contains in it a little Fish of the same Shape, which when it would feed, puts the Head out at the End of the Shell that is not joined together, and draws it in again like the Tortoise. This Fish is good Meat, when well washed from the Sand, whereof it is full. The Flesh is a little viscous, and it sometimes casts a Light like the *Phosphorus*. The Shell is alkaline, resolute, drying, opening, &c. being taken inwardly. The Dose is from half a Scruple to two Scruples. They use it externally in some Cerats and Ointments, in the Place of the *Dentalium*, which is scarce.

[This is the *Solen, Worm*. *Mus.* 256. The common Male and Female are the *Solen Alas. virgatus et subcaeruleus*, and *Solen femina unicolor*. *Lister. H. Conch.* 9. 412. The calcined Shell is said to be a good Diuretick, but is never used at present.]

BOOK II. OF FOSSILS.

P R E F A C E.

I understand by the Word Fossil, every Thing that is found in the Bowels of the Earth; as Metals, Semi-Metals, Minerals, Bitumens, Stones, and Earths. As my Design is to begin with Metals, I shall first observe, that by the Word Metal, I mean a Body that is hard, of a Substance alike in all its Parts, that may be melted by the Fire, is ductile, and may be extended by the Hammer, and is different from Minerals, Bitumens, Earths, and Stones, as will be shewn hereafter. There is great Dispute concerning the Number of Metals; some will have them to be nine, others seven, and others six; those who make them nine, would have Quicksilver, Bismuth, and Brass, to pass for Metals: But as this Opinion is not well grounded, because Bismuth is not a perfect Metal, and Brass is a Composition, I shall agree with those who have concluded that the Number is seven, which answers to the seven Planets, and the seven Days of the Week; that is to say, Gold to the Sun, and to Sunday; Silver to the Moon, and to Monday; Iron to Mars, and Tuesday; Quicksilver to Mercury, and Wednesday; Tin to Jupiter, and Thursday; Copper to Venus, and Friday; and lastly, Lead to Saturn, and Saturday. Some Persons will have it that Mercury is but a Semi-Metal; but as I think it not proper to discuss that Matter here, I shall refer the Reader to the Chapter of Mercury, and begin here with Gold, which is the chief of all Metals.

1. Of Gold.

GOLD is the most perfect of all Metals, which has occasioned its being called the *King of Metals*, the most precious, the heaviest, and most malleable, and of a shining yellow Colour. Gold is brought from many Parts of the World, but it comes in the largest Quantities from the Mines of *Caravana* in *Peru*, and of *Valdivia* in *Chili*, where it is so common, that it has been used for the same Purposes as Pewter, Brass, or Iron are here; and though this is the richest Country for Gold of any that has come to our Knowledge, yet the Inhabitants are very poor, by reason of the Dearness of all Provisions. There are several other Places where Gold is found; but the greatest Quantity comes from *Peru*, because there it is most frequently found, and is refined with the least Trouble and Expence.

Africa, Asia, and Europe produce Gold of four different Sorts. The first is in Bits of different Sizes, which is so fine and soft, that you may make an Impression upon it with a Seal, as if it were upon Wax. This natural Gold is called *Virgin Gold*. The second is in Grains. The

third in Ore. The fourth in Sand. These three last Sorts are generally found after great Rains, in those Places through which the Torrents of Water have past; and even in the Bottom of Rivers, especially such as have run through Mines of Gold; as those of *Datzin* and *Diguvira* in *Africa*, where there are Negroes who make it their whole Employment to search for it in the Bottom of the Rivers. We have Gold brought from several Parts, as *Peru* in the *West-Indies*, *Hungary*, and *Germany*, but the last is the worst of all. The Choice of Gold is to have it of as fine a Colour, and as pure as may be. The greatest Part of the Gold we have in *France*, comes from *Peru*, whence it is brought in Wedges or Ingots to *Cadiz*, by the *Spanish* Galleons. The Company in *France* bring from *Senega* a Gold which they call *En Aurillet*. This is wrought by the Savages, which they fetch from the Kingdom of *Galan*, which is near that of *Tombut*. The *Dutch* likewise bring Gold from *Sumatra*, and other Places of the *East-Indies*, together with their Peppers, and other Commodities of those Countries. There is yet another Sort of Gold, which is that of the *Alchymists*, of which I shall say nothing, because I have no Knowledge of

of it, leaving it to those who chuse to amuse themselves, and seek the Ruin of their Families, in an Operation that does not seem to have much Possibility in it. By the Means of Chymistry, they extract from *Gold* many Things that are useful for human Life. The first Preparation of *Gold* is the refining of it, which is done after four Manners; to wit, the first by Antimony, which is the best; the second by the *Cupel*; the third by *Aqua Regia*; the fourth by the *Cement*. They call that which is refined by Lead, and Ashes deprived of their Salt, or Bones burnt, *Coppel Gold*, which is that the Gold-beaters use to make *Leaf Gold* of. That which is refined by *Aqua Regia*, is called *Gold* by *Departure*, or *Precipitation*. Lastly, That which is called *Gold* by *Cement*, is that which is refined by the Means of a Paste composed of Brick, common Salt, *Sal Ammoniack*, *Sal Gem*, and Urine. There is a fifth Refinement of *Gold* by *Mercury*; but as these Matters are too long to be here particularly described, I shall refer the Reader to the several Books of Chymistry which treat thereof.

Regulus of Gold.

The *Regulus of Gold* is *Gold* refined by Antimony, and afterwards thrown into a Brass Mortar, warmed and greased in the same manner as that into which is thrown the *Regulus* of Antimony. This Operation is seldom used because of the Charge, and is seldom done but by such as have the Curiosity of having *Gold* that is extremely fine.

Leaf Gold.

What we call *Leaf Gold* is that which is refined by the *Cupel*, and then by the Help of a certain Kind of Skins, or Beasts Bladders (which the French Workmen call *Baudruce*) is by Hammering reduced to Leaves extremely light and thin.

It is a surprizing Thing to think that a Gold-beater can reduce an Ounce of *Gold* into 1600 Leaves, each of which shall contain seven and thirty Lines square. And Monsieur *Furetiere* says, that they can reduce *Gold* into one hundred and fifty-nine thousand ninety two Times its superficial Size; and the Wire-drawers into six hundred and fifty one thousand five hundred and ninety Times. There are five Sorts of *Leaf Gold* amongst the Gold-beaters of *Paris*: The finest and most durable is that which is sold to the Sword-Cutlers, wherewith they work their gilt and flowered Blades. The second is that which they sell to Smiths and Armourers to gild their Iron and Weapons. The third is that which is used in gilding of Books. The fourth is used by Gilders of

Wood, and Painters. The fifth is that used in Physick; which the Apothecaries put into several of their Powders and Confections, as well for the Virtue of it, as for Ornament.

They grind these Leaves of *Gold*, or the Clippings of them, which they call *Bracteolæ*, with Virgin Honey, and then put them into Muscleshells; and this they call *Gold* in Powder, or in the Shell. This *Gold*, so prepared, is used for Painting in Miniature.

Aurum Fulminans, or Crocus of Gold.

The *Aurum Fulminans*, or *Crocus Auri*, is *Gold* in File-dust dissolved in *Aqua Regia*, and precipitated into a brown Powder by Oil of Tartar *per Deliquium* poured upon the Dissolution. This Powder dried has much more Force, and takes Fire sooner than Gun-powder. This Preparation of *Gold* is a Sudorifick very proper in the Small-Pox, given from two Grains to six. It is likewise good to stop Vomiting, and suppress the too vigorous Operation of mercurial Medicines.

Amalgamation of Gold, or Gold-Powder.

The Powder, or ground *Gold*, is made by calcining *Gold* with Mercury and *Sal Ammoniack*; this is called *Gold* in Powder, or amalgamated, and is used by the Gilders, because it spreads easily. There are some who omit *Sal Ammoniack* in their reducing *Gold* to Powder, and only make use of Mercury. There are several other Preparations of *Gold*; as Tinctures, Extracts, and the pretended *Aurum Potabile*. But since they are not received by the World, I shall only say what all agree in, that the greatest Property of *Gold* is to give all Sorts of Perfections and Conveniences to him that is Master of it.

Gold, in Latin, *Aurum*, Sol, Rex Metallorum, is the most solid, weighty, compact, and precious of all Metals. It is generated in many Mines in different Parts of the World; but the greatest Quantity is brought in Bars or Ingots from *Peru* to *Cadiz* by the Galleons of *Spain*. There is *Gold* likewise found in *Asia*, *Africa*, and *Europe*, sometimes in a Mass, which is called *Virgin-Gold*, sometimes in Grains, sometimes in Ore, sometimes in Dust or Spangles.

The first is called *Virgin-Gold*, because it comes pure out of the Mine, without any further need of Preparation, and is so soft as to receive the Impression of a Seal, and is found in greater and lesser Pieces.

The second is in Grains, but not so fine as the first.

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The third is a Gold mixed with other Metals; and the Marcasite or Mineral Stone, which are formed together as a Stone, called *Gold Ore*. The fourth is a Gold in Dust, or Spangles mixed with Sand.

The three last Sorts of Gold are generally found at the Bottom of Rivers, after great Rains and Torrents of Water, and the Negroes either dive for or wash them out of the Sands.

Gold is refined several Ways; by the Cupel, by Departure, by Cementation, and by Antimony.

The refining of Gold by the Cupel and Departure, is done after the same Manner as that of Silver, of which hereafter.

Gold is refined by Cementation in the following Manner: They make a hard Paste with *Sal Gem*, and *Sal Ammoniack*, Chalk, and Urine. This Paste is laid with Gold, *stratum super stratum*, in a Crucible, which is placed in a Furnace, and a large Fire being made about it, the Matter is left to calcine for ten or twelve Hours, that so the Salts may penetrate the Foulness of the Gold, and throw it off in *Scoria*; and so the Crucible being taken off from the Fire, the Gold will be found separated from the *Scoria*.

Gold is refined by Antimony after this manner: They weigh the Quantity of Gold they would refine, and make it red-hot in a Crucible, by a strong Fire, and then throw in four Times the Quantity of Antimony in Powder; soon after which the Gold will melt, for Antimony is full of a saline Sulphur, which not only very much augments the Heat, but, piercing into the Metal, divides the Parts very speedily: Then the impure or gross Matters that were in the Gold is swallowed up by the Antimony, to which they readily join themselves, and so separate into *Scoria*, of which the more volatile Parts are dissipated into Smoke. They leave this Matter in the midst of a great Fire, till it sends forth Sparkles, and then they pour it into an Iron Mortar warmed and greased, beating it about till the *Regulus* fall to the Bottom. When all is cold, they empty the Mortar, and with a Hammer separate the *Regulus* from the *Scoria*. They weigh this *Regulus*, and put it into a Crucible over a strong Fire, to be melted a second Time; then, by little and little, they throw in three times as much Salt Petre to purify the Gold from any of the Antimony that may happen to remain. They continue a very violent Fire about the Crucible till the Fumes are gone off, and the Gold remains in Fusion clear and neat: Then they turn it into a Mortar as before; and, when it is cold, they separate the *Scoria* that are found underneath it; then they wash it, and wipe it with a Cloth. This *Regulus* of Gold is as fine as possibly can be; and this

Way of refining is preferable to all others, when they would cleanse Gold exactly from other Metals.

The Cupel will cleanse Gold very well from *Marcasites*, and even from such Metals as are called imperfect, but not from Silver. This Metal is so bound up and joined with Gold, that Recourse must be had to the Departure before it is possible to separate them.

Though the Departure separates Gold from Silver; yet when the Gold is precipitated, it generally carries with it some Portion of the Silver.

The Cementation often leaves the Gold undischarged of some Particles of other Metals, and the Salts entering into the Gold, dissolve a little of it. But Antimony is a Devourer, which spares no other Metal but Gold; yea it will oftentimes gnaw off some little Portion of it, and by that Means create some Displeasure to the Refiner.

The Degrees of the Fineness of Gold are called Carats: A Carat of Gold is of the Weight of a Scruple, and by consequence twenty four Carats make an Ounce.

Gold that is entirely fine, is called Gold of twenty four Carats; because if you put an Ounce of such Gold to the Proof, it will not be diminished: But if an Ounce of Gold will waste a Scruple in the Proof, it is Gold of twenty-three Carats; if it waste two Scruples, it is Gold of twenty-two Carats, and so of the rest. But many Refiners believe that there is no Gold of twenty-four Carats; for let them refine it never so well, there will still remain some light Portion of Silver. Gold easily mixes and unites with Quicksilver, and this is what is called *Amalgama* of Gold. To make it, they put Gold cut into very minute Pieces into a Crucible, leaving it to be red-hot; to this they put eight times as much Quicksilver, stirring it with a small Iron Rod, and when they find it incorporated, they cast it into an earthen Vessel full of Water, where it cools and remains soft as Dough. They wash it several Times to take away the Blackness, they then separate the superfluous Mercury, that is not well united to it, by putting it into a Cloth, and pressing it gently with the Fingers. They throw a great deal of Quicksilver upon Gold, that it may charge itself with it as much as possible; for the more Mercury enters into the *Amalgama*, the softer it will be, and the more pliable; but Gold can receive no more than a certain Quantity, because when its Pores are once full, the rest that is added is useless.

The *Amalgama* of Gold is used by the Gilders, because it is easily spread over the Work prepared for it.

Gold, when refined, will be extended by the Hammer more than any other Metal. The Gold-beaters

Beaters reduce it into very thin Leaves, which they put into little Books. These Leaves of Gold are used for Gilding. They are used likewise in compounding of Medicines, and are preferable to all other Preparations of this Metal; not only because they are easily mixed, but because they appear like Spangles, which beautify and set off the Composition.

As Gold is the most weighty, the most compact, firm, and beautiful of all Metals, so it has likewise been esteemed the most perfect; and a numerous Sect of Philosophers, called Alchymists, have thought that the Production of Gold was the principal Design of Nature in all Mines; and that it had been obstructed from its due Course by some Accident, when it produced other Metals. But this Opinion is not approved by all; and one may very reasonably believe that Iron, Lead, Copper, and other Metals, that are called imperfect, have the Perfection which they ought to have, according to their own Nature, as well as Gold. This Sentiment of the Alchymists has led them into another Chain of Reasonings, which are not more just than the former: They believe that they can perfect the imperfect Metals, by supplying the Failure of Nature, and consequently that they can make Gold. It is this Operation, which they call the Great Work, or the Search of the Philosophical Stone. To arrive at which, some of them make a Mixture of these Metals with some Matters proper to refine them, and calcine them a long Time in a strong Fire, to arrive at their Perfection, as if Nature had wanted Heat to produce them.

Other put Metals into a Digestion upon the Fire, in saline and piercing Liquors, so to draw out the Mercury, which they say is a Matter disposed to be reduced into Gold.

Others seek for a Seed of Gold in Gold itself, and believe they shall find it there, as they do the Seed of a Vegetable in a Vegetable, and that of an Animal in an Animal. To accomplish this, they endeavour to open Gold by Dissolvents; and they put it to digest by the Fire of a Lamp, or the Heat of the Sun, or that of Smoke, or Fume, or some other Degree of Heat, always equal, which approaches nearest to that which Nature makes use of.

Others look for the Seed of Gold in the Minerals, as in Antimony, where they pretend there is a Sulphur and a Mercury like to that of Gold. Others hope to find it in Vegetables, as in Honey, Manna, *Rosa Solis*, and Rosemary; and others in Animals, as in the Spittle, the Blood, the Brain, the Heart, and the Excrements.

Others imagine they can catch the Seed of Gold, by fixing the Rays of the Sun after a certain Man-
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ner; for they look upon it as a thing incontestable, that the Sun is Gold melted in the Center of the World, and that it is cupelled by the Fire of the Stars that surround it; and that the Rays which it casts, and that shine on all Sides of it, are the Sparkles which rise from it, after the same Manner that they do in refining Gold by the Cupel.

I should enlarge too much, if I would here repeat all the Fancies of the Alchymists, and the Manners of Working, which they have invented to arrive at the Perfection of their Designs. They have spared neither Time, Pains, Watching, Care, nor Money; and a great many of them having spent the better Part of their Life in this Labour, have so exhausted their Spirits, their Healths, and their Pockets, that they have fallen into a deep Melancholy, Madness, incurable Diseases, and a most miserable Poverty.

But the ill Success of these Alchymists has not hindered other Persons from entering the same Lists; the Hopes with which they flatter themselves, that they shall find the Means of making Gold does so far prepossess their Minds, that they become incapable of thinking seriously of any other thing than what may contribute to the grand Work. They think no body reasons so well as the Alchymists. They treat all People that do not come up to their Sentiments as Infidels, and they assume to themselves, exclusive of all others, the Name of the true Philosophers, or the Philosophers, by way of Excellence. If they speak, it is by Monosyllables; if they explain themselves, it is in such obscure Terms, and heightened Expression, that very often they do not understand themselves. If they write, it is that it may not be comprehended. If they work, it is with Mystery, giving sublime Names to all the Ingredients they make use of. Gold is by them called the Sun; Silver, the Moon; Tin, Jupiter; Lead, Saturn; Sal Armoniack, the solar Salt, or the Mercurial Salt of the Philosophers; Nitre is *Cerberus*, or the infernal Salt; the Spirit of Nitre, the Blood of the *Salamander*; Antimony, the Wolf, or the Root of the Metals, or *Protus*; and so of the rest. Their Preparations are all philosophical; and even the Bricks of which they build their Furnaces participate of that Quality. Besides, these Gentlemen look upon themselves to be far above all other Persons. They think they are the Depositories of the richest Secrets of Nature. They explain every thing to their own Advantage; and, according to their own Prejudices, they call themselves the Holy Nation, and the elect People. King *Solomon*, according to their Opinion, was of the Sect of Alchymists, because Gold was so common in his Days. And the Spirit
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of God which swam upon the Water, and is spoken of in *Genesis*, was the universal Spirit of which Gold is made. I could relate a great many more of their Opinions, as extravagant as these, but I am afraid of growing tedious to the Reader.

That which the Chymists aspire to by their great Labour is, as I said before, to find out the Seed of Gold. And several of them pretend that they have attained to it, and are in full Possession of it, and it is this which they call the Powder of Projection. They attribute to it the Virtue of turning any Metal whatsoever into Gold; but we see no Experiments of this pretended Fact: Those that have been made upon several Occasions, have been only Tricks, or Slight of Hand, by which they throw Dust into Peoples Eyes, and engage them to blow the Bellows, and bear Part of the Charges with them.

It is easy to apprehend that the Seed of Metals is not to be found in them, because their Production does not arrive by Vegetation, as in Plants, but proceeds from a Congelation that is made by Waters, loaded with Salts of different Natures, and sulphurous Earth, as they have acknowledged who have wrought in them.

The Alchymists say, that their Seed of Gold is a Mercury which they have drawn from Metals; but besides that it is still a Question, whether they can draw a Mercury from Metals, it is not probable, that if they can draw it, it should be the Seed of Gold.

They affirm likewise, that the Seed of Gold is in every thing, that it abounds in the Spirit of the Universe, and that Dew, Manna, and Honey, having the Impressions of the Spirit, the Seed of Gold may therefore be drawn out of them. We agree with them, that the Universal Spirit serves to the Production of Gold, as it serves to that of other Mixtures; but it is by an Acid that it contains, and not by a Seed, at least the Name of Seed is never given to this Acid; and then there is no more Reason to think that the Universal Spirit abounds in the Seed of Gold, any more than in the Seed of the grossest Mineral, the most useless Plant, or the most despicable of Animals.

Although all the antient Authors have esteemed and prescribed Gold as the greatest Cordial, when taken inwardly, yet we do not find this Virtue to be in it; for Experience shews us, that it passes by Stool in the same Weight and the same Condition in which it was taken, because it is too hard to be penetrated and digested by the weak Acids of the Body. But it is however proper, and very convenient for them who have taken too much Mercury, for it amalgamates with it in the Body, and fixes it in such a Manner, that it hinders it

from acting as it did before. And this Mixture is afterwards thrown out by Stool or Urine. It is likewise good for Colick Pains of the Glaziers and Plumbers, which are caused by the Vapours of their Lead.

Mercury clings so easily to Gold, that if a Person salivated with Mercury has any Pieces of Gold in his Pocket, they will commonly grow white in a little Time, without his touching them. But this Mercury is expelled by putting the Gold in the Fire, and afterwards rubbing it with a little Oil of Tartar.

The *Aurum Potabile* of the Chymists is nothing but a Chimæra: They pretend that they can resolve Gold into its first Principles, and separate the Salt and Sulphur of it, so that they cannot be revived into Gold any more than the Oil and Salt that are drawn from a Vegetable, can be put into the same Plant again. They call these pretended Salts and Sulphurs of Gold, potable Gold, because they can be dissolved in all Sorts of Liquors, and be taken as a Potion: They attribute to it the Virtue of being a Preservative against all Sorts of Illness, and say that it cures all Diseases, prolongs Life, and, in a word, is the universal Medicine.

The noble Qualities of the *Aurum Potabile* are grounded upon many other Chimæras. The Alchymists and Astrologers affirm, that there is a great Correspondence, and a peculiar Intercourse between the Sun and Gold, by the Influences which they communicate one to the other; and that Gold is therefore consequently impressed with the Influences of the Sun: That the Sun is the Heart of this great World, and having that Quality, it ought, by the means of Gold its substitute, to display its Virtues over the Heart of the little World, which is that of Man. That the Quality of the Sun is to warm, revive, rejoice, and cleanse the Body from all ill Humours, and to render Life happy, long, and free from Distempers: That all their Principles being certain, there is no Room to doubt that Gold has these excellent Virtues; but that as this is a Body very hard and solid, its Qualities are so enclosed and concentrated, that they cannot be well perceived without reducing them to their first Principles, which are the Sulphur and the Salt that they call *Aurum Potabile*.

It is not difficult to confute all these Arguments; they are so weak, and have so little Foundation, that they fall of themselves. *First*, The Alchymists take it for granted, without proving it, that Gold can be resolved into its first Principles, so that Salt and Sulphur may be drawn out of it; but this Metal is really so solid, and so conjoined in its insensible Parts, that they could never find

find a Means to dissolve it radically, nor to separate any of its Principles, notwithstanding all their Pains and Application. They extend, they divide, they attenuate, they rarify it, into insensible Parts, by Means of their Dissolvents, but hitherto they have done nothing but disguise it; for it still remains entire Gold, and is ready to be reduced to its primitive State by Fusion. The other Preparations of Gold, which some Persons would put upon us for the Salt and Sulphur of this Metal, are found, when strictly examined, to be nothing else but Gold extremely rarified, dissolved, and disguised by some Ammoniacal Salt; but this Gold is revived again, by freeing it from this Salt, and making it pass through the Fire.

Nay, though in Process of Time they should come to be able to dissolve Gold radically, so as to extract the Salt and Sulphur, yet it would still remain a Question, what would be the Virtue of these Principles? Which could only be known by the Experiments that should be made with them; but there is Room to believe, that the Effects would be different from what they would persuade us. The Intercourse of Gold with the Sun, and the peculiar Influences that they would have it receive from thence, are Fancies, which carry no Probability with them: We see the Sun displays its Warmth and Rays upon all Bodies, without any Appearance of its making a Distinction.

Although there is no *Aurum Potabile* in the World, and that it is uncertain what Effect it would have could we find it, yet the very Name of *Potable Gold* imposes upon a great many People, and gives an Opportunity to Mountebanks to cheat them with Impunity; for they draw Tinctures from some Ingredients, whose Colours come near to that of Gold, and sell them at a very great Rate, under the Title of *Aurum Potabile*. This Sort of Cheat is what generally succeeds best; for Patients are prepossessed in Favour of such Medicines as carry great Names, and have a specious Appearance: Men are likewise apt to cry up that which is dear. So the Name and the Price gains an Estimation. It likewise often happens, that these Tinctures, which go by the Name of *Aurum Potabile*, produce some good Effect, because they can take care to make them with such spirituous Menstruums, as comfort the Heart, and expel ill Humours by Perspiration; then it is cried up for a Miracle, and the Effect is attributed to the Gold, which can have no Share in it, as having never entered into the Liquor.

Others, who are less Cheats than those I have spoken of, dissolve Gold in some spirituous Liquors, after the common Manner; and as the Dissolution of Gold is always yellow, they make it pass for

the true *Aurum Potabile*, altho' it is only Gold divided, and may be reduced to the same State that it was in before.

Besides, I cannot see that the Perfection of Gold must necessarily give it the Preference in Physick to other Metals; on the contrary, this Perfection, being an exact Contexture of the Parts, and a very great Solidity, is a Reason why this Metal is so much the less disposed to be digested and distributed into the Vessels of the Body; Iron, Mercury, and the other Metals, which are called imperfect, are much more tractable, for we put them into a Way of penetrating through the whole Body, and producing considerable Effects: What is Perfection with the Workman, is often an Imperfection with the Physician; and we make better Use of the mixt Bodies, whose Principles are naturally rarified and dissolvable, than of those, which through too much Firmness are rendered, as it were, incorruptible.

[To what has been already observed, it may be added, that Gold is often found in Orpiment, in a kind of *Pyrites*, of an ashy purplish Colour, and hid in the Ores of other Metals, especially Silver.

Gold, in all common Fires remains fixed, and even when exposed to the Focus of the strongest Burning-Glass, suffers that Heat a great while before it begins to evaporate: it never contracts Rust, and is only dissoluble in *Aqua Regia*, but may be calcined by common Sulphur if set on Fire and flaming. The Analysis or Resolution of this Metal, has hitherto been attempted without Success; its Sulphur and Earth are so strictly united as not to be separable by the common Powers of Fire, and before the Burning-Glass entire Parcels of it fly off, without any apparent Resolution into its Principles.

The Use of Gold in Physick was unknown to the ancient *Greeks*; the *Arabians* first gave it inwardly, imagining it must have great Virtues, but in all Probability it has really none, and the present Practice knows it in no other Intention, than the gilding Pills and Boluses.]

2. Of Marcasites.

UNDER the Name of *Marcasite*, according to Monsieur *Morin*, Doctor of Physick of *Montpellier*, is to be understood a metallick Mineral, which is loaded with Sulphur and Earth. This in the Fire swallows up the metallick Matter which gets loose, and the Sulphur carries up with it Parts which being more subtil, mercurial, and less fixed, are evaporated;

so that there remains nothing but a Body, which is vitrified and useless.

Altho' from this imperfect Mineral, no Metal can be drawn by Fusion, whatever else be mixed with it to promote the Separation, yet it is much searched into by all true Chymists, and preferred to those from which Metals may be extracted, which some improperly call *Marcasites*; and it is with just Reason, for the Principles not being yet well united, it is the less difficult to separate them, and consequently to determine and multiply them by their Operations.

They who work in Mines throw these Substances by, and separate them from the Ore, which is so much the better, by how much the less Earth and Sulphur there is in it.

It is easy to conceive, that each Metal has its proper *Marcasite*; which is, as it were, its Seed or Bud; and the more it ferments, and the nearer it approaches to a metallick Perfection, the farther it recedes from the Nature of a *Marcasite*.

It must nevertheless be observed, that we sell commonly but three Sorts of *Marcasite*, which are those of Gold, of Silver, and of Copper. That of Gold is usually a little round Ball, very weighty, and difficult to break. That of Silver is almost of the same Make, but is not so high coloured. That of Copper is either round or long, and oftentimes irregular, and of the Largeness of a Tennis Ball. This *Marcasite* is very hard, but if you leave it in a moist Place, the Moisture will penetrate it, and turn it all to Vitriol, and so it comes to nothing. When you break in Pieces these *Marcasites* of Copper, they are of a yellow Gold Colour, and radiated like a Sort of Sun. These are the Descriptions of the *Marcasites* we commonly sell, but for those of Iron, Tin, and Lead, I cannot, to this Day, learn positively what they are. There are some who affirm positively that the Load-Stone is the *Marcasite* of Iron; the Bismuth, or natural Tin-Glass, that of Tin; and the Mineral Zink, or Spelter, that of Lead. And there are others who say that Tin and Lead are the same thing, and differ only in Colour, grounding themselves upon this, that the Antients called Tin White Lead, and Lead Black Lead, so that there cannot belong to them two Sorts of *Marcasites*; and my Sentiments must concur with theirs; seeing it has not been possible for me to find any natural Bismuth or Tin Glass, as I shall shew hereafter.

It is remarkable, that tho' I say we sell but three Sorts of *Marcasites*, yet there are very few large Druggists Shops where there are not found several other Sorts, as the square, the flat, the grey, the black, the yellow, and the like.

And this happens, because they give the Name of *Marcasite* to every thing they do not know, and take to be Mineral; and the Buyer, not knowing what it is, any more than he that sells it, it often happens, that they who work it are deceived, and lose their Labour.

I have by me a white *Marcasite*, full of Veins of Gold, which was brought from the *Isles*, and was affirmed to me to be true Gold Ore.

The *Marcasite*, is a metallick Mineral, of which there are several kinds; for all *Lemery*. Stones which contain more or less of a Metal are called by this Name. But three Sorts are more principally intended by the Word *Marcasite*; that of Gold, that of Silver, and that of Copper.

The two first are in little Balls, of the Bigness of a Nut, almost round, weighty, brownish without, but of different Colours within; for one has the Colour of Gold, the other of Silver, but both bright and shining.

The *Marcasite* of Copper is as large as a little Apple, round or oblong, brown without, yellow and crystalline within, bright, sparkling, and easy to be broken.

The *Marcasites* are taken out of the Mines. They contain a great deal of Sulphur and vitriolick Salt, especially that of Copper.

[The *Marcasites* of the *Arabians*, were the various kinds of the *Pyrites*, and since their Times various imperfect Ores have been known in the Shops, under the Name of *Marcasites*, with the Addition of that of the Metal they were supposed to belong to, but what is now kept there, under the Name of *Marcasite*, without any Addition, is Bismuth or Tin-Glass, of which we shall treat hereafter.]

3. Of Silver.

SILVER, which the *Spaniards* of *Peru* *Pomet*. call *Plata*, is the best and most perfect Metal next to Gold. It is white, hard, extensible, and very agreeable to the Sight. It is also called *Luna*, because of its bright white Colour, and the Influences it was supposed to receive from that Planet. The most famous Mines for Silver are those of *Rio de la Plata*, that is the *River of Silver*, and of *Potosi*, in *Peru*, which were discovered in the Year 1545. The Enclosure which bounds the Extent of them, is called *Potosi*, which is a Mountain situated in a flat Champain, rising in the Form of a Sugar-Loaf, above a League in Circuit below, and a Quarter of a League on the Top. The Silver coming out of the Mine is refined with Mercury, or Quicksilver; and there have been some Years in which they have taken out

of these Mines three hundred thousand Weight of Silver, pure and neat; for the refining which they made use of six or seven hundred thousand Weight of Quicksilver; for the more they refine it with Quicksilver, the better it is. There are several other Silver Mines in the *Indies*, in *Europe*, and even in *France*.

Silver is of itself a very pure Metal, and especially when it has been well refined, the Chymists perform several Operations upon it; the first of which is its Purification.

Purification of Silver by the Cupel.

Silver purified by the Cupel, is Silver which is put into melted Lead, and by means of the Fire, and a certain Quality inherent in it, the Lead works upon the Silver as the White of an Egg does upon Sugar, separating all its Dross when it is well refined. They granulate it after the Manner that we see it, which, if it be Proof, ought to be well refined, white, and very shining. This sort of Silver is made use of in several of the following Chymical Operations.

Of the Crystals of Silver, or the Vitriol of Luna.

They extract the Crystals of Silver from cupelled Silver dissolved in Spirit of Nitre, when the Moisture is almost evaporated, they take out the Crystals, which being applied to the Flesh, make an *Eschar*, as the *Lapis infernalis*.

Of the Lapis Infernalis, or the Silver Caustick.

The *Infernal Stone* is so called, because of its burning Quality, and its black Colour. It is made of cupelled Silver dissolved in Spirit of Nitre, afterwards perfected by the Fire, and poured into a Mould, warmed and greased on the Inside, where growing cold it coagulates, and becomes a Stone of the same Shape that the Mould has given it.

This Stone ought to be made choice of in little Pieces of a Finger's Length, dry and solid, of a brown Colour, approaching to that of Iron, which will neither burn the Fingers nor Paper, unless moistened, and does not melt, when exposed to the Air, without Difficulty, but will immediately burn any Place that is moistened as soon as it is laid upon it; which are the true Marks of the *Infernal Stone*, when rightly prepared with the cupelled Silver. You ought to reject that which is green, and turns the Paper it is wrapt in of that Colour, that grows wet, and is easily dissolved in

the Air, because it is made with Copper. Some use the common Plate Silver, or the Burnings of old Silver Lace, but the Stone they make is not so good as the other. This Stone is much used by Surgeons to burn and consume dead and superfluous Flesh; but special Care must be taken not to touch the sound Flesh, because the Stone will not fail to burn it, and cause an Extremity of Pain, especially if the Place be wet.

The *Lapis Infernalis* has the Property of staining Marble, and entering into it; so that upon sawing the Marble, the same Figure shall appear within that was on the Outside, and will never wear out. You work with it as if it were a Crayon, and the Colour it makes is black.

Of the Tincture of Silver.

The *Tincture of Silver* is a Dissolution of Silver in Spirit of Nitre, which they precipitate by means of a Solution of Salt; then they put this Silver *Calx* into Spirit of Wine acuated with volatile Salt of Tartar, and volatile Salt of Urine, and thence draw a beautiful, celestial, blue Tincture, very much recommended against the Epilepsy, the Palsy, Apoplexy, and the other Diseases of the Brain. The Dose is from six to fifteen or sixteen Drops.

Silver, in *Latin Argentum*, or *Luna*, *Lemery*. is a Metal very compact, weighty, hard, white, smooth, and shining, very extensible by the Hammer; and resisting the Cupel. It is taken from several Mines in *Europe*, but the greatest Quantity comes from *America*, and especially from *Le Rio de la Plata*, in *Peru*, where it is often found intermixed with small white crystalline Stones, and with Gold, Copper, or Lead. Being taken out of the Mine, it is refined with Quicksilver, and then transported. They who would render it as fine as possible, refine it by the Cupel, and by Departure, in the following Manner:

They make the Cupel red-hot in the Fire, and they put four or five Times as much Lead as Silver to cupel it; they let the Lead melt, and extend itself, so that one Part of it, in a little Time, enters into, and fills the Pores of the Cupel; they cast the Silver into the midst of the Cupel, where it is not long before it melts; they blow the Fire till it is so strong, that the Flame encompasses the whole Matter; then all the Impurities unite with the Lead, because that Metal being sulphureous, it cleaves to and embraces the gross Bodies better than the Silver. The Fire drives the impure Mixture to the Circumference, in the same manner as Scum, or *Scoria*, and the Silver remains fine and clean in the Middle. They know

know that the Refinement is perfected, when no more Fume arises; then they pour the Silver into a Mould, to let it cool, and this they call Silver of the Cupel. The *Scoria* of Silver, mixed with Lead, make the Litharge, of which I shall treat hereafter. These *Scoria* consist of the Parts of some other Metals, or the Marcasites which were mixed with the Silver when it is taken out of the Mine.

It is to be noted, that Silver, being thrown into melted Lead, runs sooner into a Fusion, than if it were put alone to melt in a Crucible, because the sulphureous Parts of Lead contribute to the speedy Fusion of Metals.

This Purification of Silver clears it from all other Metals but Gold, which likewise resists the Cupel, so that one cannot be altogether assured that this Silver of the Cupel is entirely Silver; therefore if one would separate it from any little Quantity of Gold that may be in it, Recourse must be had to another Operation, called the *Departure*, and this is the Manner of Proceeding.

They melt together in a Crucible by a strong Fire, three Parts of Silver, and one Part of Gold: They throw this Mixture, when melted, by little and little, into cold Water, where it coagulates into Grains; they throw away the Water, and dry these Grains, and then put them to dissolve in two or three Times as much *Aqua Fortis*; the Silver is dissolved, and the Gold is precipitated to the Bottom of the Vessels, because it cannot be penetrated by this Dissolvent.

It is to be remarked, that in this Operation they mix Gold with the Silver, that if the Silver should contain any small Quantity of Gold, it might be drawn precipitated along with that which was added. This precipitated Gold is called *Gold by Departure*, and they can easily turn it into an Ingot, by melting it in a Crucible over the Fire, with a little Borax, and pouring it into a Mould.

This Dissolution of the Silver is thrown into an earthen Vessel, in which there is a great deal of Water, and a Plate of Copper, where it is left for five or six Hours, or till all the Silver is precipitated, and sticks to the Copper Plate, and then they gather it together and dry it; and it is this they call the Precipitate of Silver, and sometimes the Calx of Silver. The Water in which this Precipitation was made, becomes blue, because of some Portion of Copper dissolved in it, and is called the *Second Water*; it is used to deterge, and to eat proud Flesh, being applied outwardly.

Silver also may be precipitated, by mixing Salt Water in the Dissolution; for the Sea Salt will produce the same Effect as the Parts of the Cop-

per, that is to say, by pushing rudely against the Points of the *Aqua fortis*, which hold up the Particles of the Silver, it will break them, and make them let go their Hold, so that the Silver having nothing to support it, will, by its own Weight, fall to the Bottom.

The Silver, so precipitated, is cast into an Ingot, by melting it in a Crucible, with a little Salt-Petre, and afterwards pouring it into a Mould. This Silver is the finest of all, and of twelve Penny-Weight, if it has so much; but there is always some little Allay of Copper to be found in Silver, let it be never so well refined.

That which is called *Carat* in Gold, is a Penny-Weight in Silver; so an Ounce of very fine Silver is of twenty Penny-Weight, or twenty-four Scruples, which make twenty-four Times twenty Grains. This Ounce of Silver should not be diminished by the Proofs; but if it lose a Scruple by the Cupel, the Silver is but of nineteen Penny-Weight sixteen Grains; if it loses two Scruples, it is seventeen Penny-Weight twelve Grains; but they do not express themselves by twenty Penny-Weight in Silver, as they do by twenty-four Carats in Gold; for they double two Pence in Silver, and say Silver of twelve Penny-Weight, to express Silver of the utmost Purity; Silver of eleven Penny-Weight and an half, Silver of eleven Penny-Weight, to denote the Degrees of its Fineness, and so of the rest.

Plate Silver contains one Part Copper to twenty-four Parts Silver; and Silver of the Cupel has but one Quarter Part Copper, to twenty-four Parts of Silver.

They beat the purest Silver, and reduce it into very fine and thin Leaves, which we make use of in Medicine. One may likewise use the Precipitate of Silver instead of these Leaves.

Silver is proper for those who have used too great a Quantity of Quicksilver, either by Frictions, or taken inwardly, for it binds or amalgamates itself with it in the Body, and depriving it of its Weight, takes away its Virtue. It may be taken from four Grains to a Scruple, and a larger Dose may be given without Fear of any Danger. It is pretended by several Authors to be an infallible Medicine for Diseases of the Head and Brain; but Experience shews us, that it is of no Use in such Cases.

The Astrologers and the Alchemists call it *Luna*, because they imagine this Metal to be of the same Matter as the Moon, and that it receives continual Influences from her for its Nourishment.

[Silver, as found in the Mines, is distinguished into native, and rude; the native is that which is found pure in the Mine, either in Fissures of Rocks

Rocks or Stones, or mixed with Sand or Earth without Stones. This is seen in many various Forms, in small oblong Veins, fimbriated, in small Filaments like Hairs, granulated, in the Form of Branches of Trees and in large Masses. Rude Silver is that which is found in Ores and must be refined by Fire : The Silver Ores are in some Mines red, which is occasioned by their being mixed with Arsenick, in some of a Lead Colour, which is owing to the Sulphur contained in them, in other Black, Purple, Ash coloured, &c. according to the different Substances they are mixed with; it is also found in Gold, Copper, Tin, and Lead Ores in different Quantities. Almost all the Lead Mines in *England* contain more or less Silver, but the richest are those in *Cardiganshire* in *Wales*. Silver is easily separated from Lead, as observed by our Authors, but the extracting it from the *Peruvian* and *Mexican* Ores is much more difficult, because the Ores are hard; and mixed with vitriolick, arsenical, or other Substances, which carry off with them a considerable Quantity of Silver, or burn it to *Scoria* with themselves.

Silver is harder, and less ductile than Gold. Its specifick Gravity to that of Gold is a little less than as five to nine, so that it is lighter than Lead; it never contracts Rust, and is dissoluble by *Aqua fortis*, and not by *Aqua regia*. It is not destroyed by Lead, but being long exposed to a strong Fire with Antimony, is something diminished by the sulphureous Parts of that Metal. When exposed to the Focus of a great Burning-Glass, it flies all off in Smoak but very slowly, and does not vitrify, as many other Metals do; the Solution of pure Silver is limpid, and its Crystals are of no Colour, but if it contains any Copper the Tincture is greenish or bluish, the Taste of the Crystals is intensely better. Silver made to mix with common Salt, melts into a semi-deaphanous Mass resembling Horn; this is called *Lima cornea*, and it is very difficult to reduce it to Silver again, because being volatile, if it be exposed to a strong Fire it flies almost all off in Vapour. Notwithstanding all that has been said by the *Arabians*, and since them by the Chymists, in Praise of the medicinal Virtues of Silver, it is yet a very great Question whether it really has any or not, and the principal Use made of it in the Shops, is in the Leaf to cover Pills and Boluses, instead of Leaf Gold, which is so often adulterated, that many fear to use it. It is also to be observed, that all the blue Tinctures of Silver, so highly commended by the Chymists, are not Tinctures of Silver but of the Copper contained in Silver; and therefore very unfit for internal Use, for a true

Tincture of Silver must be altogether colourless, like Water.]

4. Of Iron, or Mars.

IRON, which the Chymists call *Mars*, *Pomet.* because of the Influences they pretend it receives from that Planet, is a Metal the hardest, driest, and most difficult to melt of all others. It is composed of an Earth, a Salt, and a Sulphur, ill digested, and ill united, which makes it subject to Rust. There are Mines of Iron in *Spain*, *Germany*, *Sweden*, and *England*. The best in *France* are those of *Champagne*, *Lorain*, and *Normandy*. There are some in *Burgundy*, *Berry*, and other Places. An Iron Mine is sometimes found within an Inch of the Surface, sometimes one, two, three, four, five, or six Feet deep. The Ore is found in different Manners, sometimes in Pieces, and sometimes in Sand. I shall not discourse here of finding out Mines by the Jugglers with a Rod of Hazel, because Monsieur the Abbot *de Vallemont* has lately written a very exact Treatise about it.

The Manner of taking Iron from the Ore, and making it into cast Iron, and commonly called Sow-Metal.

After the Ore is taken from the Mine, they wash it in a running Water, to separate the Earth from it, and then carry it into large Furnaces, where covering it with Coals, Flint-Stones, and Potters Clay, or Earth, by the means of two large Pair of Bellows wrought by a Water-Mill, it melts like Lead; and after scumming from it a Dross, which when cold becomes like Glass, they stay the Bellows, and with an Iron Bar open a Hole which is in the Bottom of the Furnace, and immediately there comes out as it were a Stream of Fire, which runs into Holes made in the Nature of Moulds, of six, seven, or to ten Feet long, and a Foot broad. The Iron, thus thrown into these Moulds, is what the Smiths call Sow-Metal, or cast Iron. It is to be remarked, that when they would make Cannon-Bullets, Mortars, Weights, Backs of Chimneys, or other Works, of this Sow-Metal, or cast Iron, they take up the running Metal in great Iron Ladles, and put it into Moulds made in deep Sand, or else of cast Iron.

It is also to be observed, that the finer the Work is to be, the longer is the Metal to remain in Fusion; for the Matter continues but twelve Hours for the coarser Works, and fifteen or eighteen Hours for the other. The cast Iron of *France* cannot be touched by the File, as that of *Germany*

many and other Places, but must be polished with Masons Dust, or Emery.

Of Iron in Bar, and other Kinds.

When they would reduce this Metal into fine Iron, they take one of these Lumps of Sow-Metal, and carry it to a Sort of Forge, on a Level with the Earth, in the Middle of which is a Hole, into which the Matter flows as it melts. They melt the Metal by the Means of Charcoal, and two great Pair of Bellows, which are moved by Water. As this Matter melts, the Refiner stirs it with an Iron Bar; and the more vigorously the Matter is stirred, the more kindly will the Iron be, and be better qualified. After it is well stirred, they carry the Matter, when a little hardened, with large Tongs, to an Anvil, where, with a great Hammer, they beat it, to force out of it the Earth or other foreign Matter that might have remained in it; and then the Iron is made, and will endure the Filing. When they would reduce it to Bars, or any other Fashion, they take this Mass, which the Workmen call the *Piece*, and carry it to another Forge, and by the Help of Charcoal, and two Pair of Bellows wrought by two Men, they make it red hot, and then carry it to the Anvil, and with a wooden Hammer, with Iron at the End of it, they make it as long and as thin as the Hammerer pleases. There is one Thing remarkable, that is of no small Consequence, which is, that seeing the Hammerer can reduce but half this Piece into Bar, because he must hold it fast by the other Part, he therefore, with us, to cool it the sooner, that he may go to work upon the other Part, throws it into Water; and this is the Cause that the *French* Iron is brittle: But this might be easily remedied, by letting it cool of itself. It may be objected, that it is not altogether the quenching it in the Water that makes it so brittle, but it proceeds oftentimes from the Mineral, or from its not being well stirred. I do not disagree to this, but there is a Proverb which says, *Ill to Ill can never be good*; this is the Manner of making Iron into Bars.

Of Iron in the Gad, and of Iron Wire.

Iron in the Gad, or *Rod Iron*, is made from Iron in the Bar, which has been heated in a Kind of Furnace, and by Steel Mills cut into the Shape and Figure we see it in. The *Iron Wire* is made of the Rods drawn through little Holes, after the Manner that they make Wax-Candles: They begin with the largest Hole, and finish by the little one, still diminishing the Size of it.

Of Iron Plates, and of Black and White Iron, or Tin, as it is called with us.

The *Iron Plates* are made of Bars heated, and made thin with Hammering. There are two Sorts of Plates, the great and small. They make the *Black Iron* by beating the Plate with smaller Hammers: But besides this, in *Germany* they make a white Iron of which they make several Utensils. This is a soft Iron reduced into thin Plates, and afterwards covered with Tin, in which Operation it is said they use *Aqua fortis*. There is white Iron made at *Nevers*; but that of *Germany* is most esteemed, because it is more white and brighter, and will not rust as the other.

Of Steel.

Steel is only *Iron* purified and made harder, by means of plunging it in cold Water after heating it in Furnaces with the Horns and Hoofs of Animals. The volatile Salts of which are supposed to penetrate the Substance of Iron, and turn it into Steel, which is finer or coarser according to the Number of Times this Operation has been repeated. The finest *Steel*, which is that of *Kernent*, is also supposed in a great Measure to owe its Excellence to certain Drugs with which the Water it is plunged into, is impregnated, as will be related hereafter.

The best *Steel* is that which comes from *Germany*, and is called *Steel of Kernent*, from a Village in *Germany*, called *Kernent*, where the best *Steel* is made. This Sort is called *Steel of a double Mark*, and is used in making such Instruments as are extremely fine; as Lancets, and other Chirurgical Instruments, Razors, Graving Tools, &c. The second sort is that they call *Rose Steel*, because when it is broken there appears something in it like a little Rose, of a Partridge-Eye Colour, and besides, the Casks that they come in are marked with a Rose. This *Steel* is in little Bars, from one Foot to two Feet long, and half an Inch thick. There are likewise several softer Sorts of *Steel* which are but the Refuse of the *Rose Steel*, which some call *Steel of the single Mark*. We have likewise *Steel* from *Hungary*, *Italy*, and *Piedmont*. There are also several Sorts made in *France*, as those of *Vienne*, of *Rive* in *Dauphine*, or *Clamecy* in *Auvergn*, and of *St. Disier* in *Champagne*; it is likewise made at *Nevers*, and at *la Charite*; and this they call *Common Steel*.

But of all the Sorts of *Steel* in *Europe*, there is none that comes near to that of *Kernent* for Goodness,

ness, because amongst the hundred and fifty Iron Mines that the *Germans* are possessed of, there are none so proper for the making fine Steel as those of *Kernent*, and there are, beside, no People but those of that Place, who exactly know the just Quantity of Arsenick, Tar, Orpiment, Sublimate, Antimony, white Copperas, and other Drugs, of which to compose the Water to dip it in: And this, in few Words, is the Reason why no fine Steel is made but in *Germany*, and that many Persons ruin themselves by endeavouring to counterfeit it. As to the tempering of common Steel, they make use of nothing but common Water.

There was formerly a Steel came from *Damascus*, and was very good; and if we will believe Mr. *Furetiere*, the Temper of it was made by the Impressions of the Air, when a Horseman riding full Speed held it in his Hand and brandished it in the Air. He also says, they wetted it by means of a wet Goat-Skin drawing its Edge over it as if they would cut the Skin.

Good Steel ought to be brittle, of a fine Grain, and as white as it can be made. The Chymists make several Preparations of it, of which hereafter. As for the Filings of Steel, they are of Use in Physick, the best are those of Needles; its Proof is by putting it upon a lighted Candle; that which burns by halves, and puts out the Candle, is mixed with the Filings of Iron.

Of the aperitive Saffron of Mars, or the Crocus Martis.

The *Crocus Martis*, which is called aperitive, is a Preparation of Iron or Steel, which is made after three Manners: the *First*, by exposing Plates of Iron to the Dew. The *Second* is by sprinkling the Filings of Iron with Rain Water, or Water mixed with Honey; from whence, after some Time, you shall have a Rust of a brown Colour. These Preparations of *Iron* or *Mars* are very long in making, but very good for the Diseases hereafter mentioned. But as these two Sorts, as I have said, require much Time, and have but a bad Colour, they chuse rather a *third* Way, which is to take a Piece of Steel, and heat it in a Smith's Forge, and then applying to it a Roll of Sulphur, melt it down, and reduce it into a Powder, and so melted, put it into a Crucible, together with more Sulphur, and reduce it by the Fire of a reverberatory Furnace, into a Powder of a beautiful red Colour: Others use the Filing of Iron instead of Steel.

The aperitive *Saffron* of *Mars* is commonly called *Crocus Martis aperitivus*, or *aperiens*, and is an excellent Remedy for the Dropsy, and to

cure the Green-Sickness. The Dose is from ten Grains to forty, in some Electuary, Conserve, or Lozenge, or, as Mr. *Lemery* says, with some Purgatives.

Of the astringent Saffron of Mars.

The astringent *Saffron* of *Mars*, called *Crocus Martis astringens*, is one of the former Preparations of *Mars* washed several Times with Vinegar, and afterwards put into a Crucible, and by a strong Calcination of five or six Hours, reduced to a reddish Powder, but not so beautiful as that above.

The Use of this *Crocus* is to stop Blood when voided, either above or below. It is taken in a like Dose as the former, in Medicines proper for the Malady. The Ancients have given both of these, as well as many other things, the Name of *Crocus*, or *Saffron*, from their reddish Colours.

Of the Salt or Vitriol of Mars.

There are two Sorts of Salt of *Mars* or *Iron*, but the best is that which is made by putting Oil of *Vitriol* and Spirit of Wine in an Iron Pan, and when it has staid there three Weeks or a Month, you will find at the Bottom a greyish Salt, which you must dry, and then preserve it carefully. The other Salt of *Mars* is made by putting the Filings of Steel into distilled Vinegar, proceeding in the same Manner as you would make Salt of *Saturn*, as shall be shewn hereafter. The first Salt of *Mars* is an excellent Remedy against Obstructions. The Dose is from four to twelve Grains in any Liquor proper for the Distemper. As for the Choice of it, the whitest and driest is the best.

Of the Oil of Mars.

Oil of *Mars*, or *Iron*, as it is improperly called, is a Salt of Iron resolved into Liquor in a Cellar. Some People use this Oil as the Salt, with this Difference, that they give it in a larger Dose.

Of the Crystals of Mars.

Crystals of *Mars* are made by putting the Filings of Steel in Water, and putting upon it a good Spirit of *Vitriol*, and by putting it in a Cellar; they draw thence *Crystals* of a greenish Colour; which being dried, are made Use of to the same Purposes as the Salt or the Oil, but they must be given in lesser Quantities, because of their great Acrimony. Some Persons pretend, that by a Retort they can draw a Spirit of *Vitriol* from these *Crystals*:

tals: But as this Spirit must be very weak, I would not advise any body to trouble themselves about it.

Of the Tincture, or Syrup of Mars with Tartar.

They draw from the Rust or Filings of Iron, by the Help of *Tartar* and boiling Water, a blackish Tincture; which after having been evaporated and reduced to the Consistence of a *Syrup*, is what they call *Tincture*, or *Syrup of Mars*; others cause almost all the Moisture to evaporate, and so make that which we call the thick *Tincture*, or the Extract of *Mars*.

They attribute to these Tinctures the Property of being very good Aperitives; their Doses are different, for the thicker the Tinctures are, the less of them must be taken; the ordinary Dose is from a Drachm to half an Ounce.

Of the Tincture, or astringent Syrup of Mars.

They likewise draw from the Rust of Iron, with the Lees of Wine, or the Juice of Quinces, or any other astringent Juice, a *Tincture*, *Syrup*, or *Extract*, to which they attribute a binding Quality. The Dose of these Extracts is likewise according to their Thickness, but the common one is from ten Grains to half a Drachm in some astringent Liquor.

Of Mars Diaphoretick.

Mars Diaphoretick is made of the Rust of Iron mixed with an equal Quantity of Sal Armoniack, by a subliming Vessel: they draw thence Flowers which they dissolve in Water, and then precipitate them by pouring upon the Dissolution the Oil of *Tartar per deliquium*. They dry this Powder, which being dried is what they call *Mars Diaphoretick*, altho' the diaphoretick Virtue, which it may have got from the Sal Armoniack is not very great, because it is almost all carried away by the Water.

Iron, in *Latin* called *Ferrum* or *Mars*, *Lemery*. because the Astrologers pretend that this

Metal receives Influences from the Planet of that Name, is a Metal very hard, dry, and the most difficult to melt of all others. It is naturally composed of a vitriolick Salt, Sulphur, and Earth, very ill digested, and bound together, which makes it rust so easily. There are several Mines of it in *Europe*, and especially in *France*, in *Champagne*, *Lorraine*, *Normandy*, *Burgundy*, and *Berry*. They take it up sometimes in a *Marcasite*, that is of

the Bigness of Pig Nuts, and of the same Colour, streaked with shining Metalline Veins, sometimes in Sand. They wash this *Marcasite* to get the Dirt from it, then they put it into great Furnaces made on Purpose; they cover it with Charcoal, Flints, and Potters Clay, and by means of a very violent Fire, blown by huge Bellows, they put it into a Fusion; they scum thence a Matter that is as it were vitrified, resembling Enamel; then they let it run into Moulds, for great Wedges, about ten Feet long, and a Foot thick. This is called by the *French*, *Gueuse*, commonly, Sow-Metal. The Rust of Iron, is Iron penetrated and rarified by the Moisture of the Air, which the *Latins* call *Ferrugo*; it is aperitive by Urine, and astringent by the Belly, proper for all Illness caused by Obstructions, and to stop Looseness.

Iron, made red-hot in the Fire, and several Times quenched in Water, renders the Water astringent and proper for Diseases of the Belly. The Waters of a Smith's Forge retaining some saline and vitriolick Particles of the Iron, are astringent by the Belly, and aperitive by Urine.

Steel is Iron rendered more hard, more compact, more fine, and polished, by Calcination and dipping it in Water. To do this, they lay Iron, and the Hoofs of Animals, *Stratum super Stratum*, in a Furnace made on Purpose, near the Mines: they put Fire to it, and when the Metal is softened and almost melted, they dip it in cold Water, that so the Pores which were opened by the Force of the Fire, may immediately be shut up; and they oftentimes repeat the Calcination and the Dipping.

The Hoofs of Animals, burnt in the Fire, produce two Effects: The first is, that they dissipate the most volatile, the most saline, and the most rarified Particles of the Metal. The second is, That a Portion of the volatile Salt which these Hoofs do naturally contain, is introduced into the Pores of the Metal. Now this Salt being rendered an Alkali by the Calcination, it absorbs and destroys the Points of the vitriolick Salt, and the Acid which remained in the Iron; so that the Motion of this Salt being relaxed, the Metal does no longer rarify itself so much, which may contribute to give a good Quality to the Steel; but the principal one that it gains, comes from the Water it is dipt in, which is made on Purpose. They make Steel in many Places of *France*, *Italy*, *Piedmont*, and *Hungary*; but the best is made in *Germany*, at a Town called *Kernent*. Steel ought to be brittle, of a fine Grain, and white.

The Filings of Steel are proper to remove Obstructions, for the Jaundice, and for Diseases of the Spleen. The Dose is from a Scruple to a Drachm.

Water,

Water, in which red-hot Steel has been quenched, called Chalibeate Water, is an Astringent.

It is remarkable, that in Iron there should be two such very differing and opposite Qualities, as of Drying and Moistening, Opening and Obstructing, Astringing and Relaxing. These Qualities are thought to be owing to the mixed Texture of the Body; the relaxing Quality, to the saline and more volatile Part; the Astringent, to the Earthy, and that which is more fixed.

The Salt of Iron is made in the following Manner. Take Oil of Vitriol, or of Sulphur *per Campanum*, two Pounds; Water, two Gallons; mix them well in a well-glazed earthen Jar, by dropping the Oil into the Water, and stirring it well with a wooden Rod; put into this Mixture, of Filings of Iron two Pounds or more, stirring it for half an Hour, then let it settle; decant off the clear Water, filter, and put it into a Frying-Pan, which over a Charcoal Fire evaporate to Driness, and so there will remain a pure white Salt at the Bottom. This Salt cures and opens the worst Obstructions in the Womb or Bowels; it sometimes purges, and may be given to half a Scruple in a Glass of Wine alone, or sweetened with Syrup of Violets.

After the Filings of Iron are turned into Rust, and a Tincture extracted from thence, the *Fæces* are a Kind of *Crocus* made without Fire, which are drying and binding, good against Fluxes, Bloody Flux, Gonorrhœas, Whites in Women, &c. They dry up Ulcers and Wounds, stop all Fluxes of Blood, the Flux of the Terms and Hemorrhoids; they strengthen the Liver, dry up the Water in Dropsies, and running Ulcers in the Legs. Given from a Scruple to half a Drachm, in a proper Vehicle, every Night going to Bed.

The Copperas, or Vitriol of Iron, is made in great Quantities by a cementatory Calcination, then perfected by Dissolution, Evaporation, and Crystallization.

Not only the Salt of Iron, but the Tinctures, are said to open Obstructions of the Reins, cure Ulcers in the Reins and Bladder, help the Cholick, Weakness of Stomach, or Want of Appetite; it gives ease in the Gout, and other Pains of the Joints, both by inward taking, and outward Application.

The Rust or Vitriol of Iron, and mixed with Vinegar, applied, is good against Tetters, Ringworms, Scabs, and running Sores, or Breakings-out, though of many Years Continuance, especially if a little Roch Alum be mixed with it; it also takes away the *St. Anthony's Fire*, or any other lesser Heats and Inflammations.

[No Metal is so necessary for the Uses of Life as Iron, and by the Goodness of the Crea-

tor, none is found so plentifully in almost every Country. It is dug out of the Earth in very different Forms, in some Mines it is found pure, either granulated or in Lumps; in others it is met with in a heavy Stone of a dark yellow or reddish Colour, or in a heavy yellowish or reddish Earth. Some Ores yield the Metal contained in them only by breaking, and a few Hours Fusion, others require a great deal of Labour to separate it, and the Addition of Lime, Marle, or Stones, to facilitate the Fusion.

The specifick Gravity of Iron to that of Gold, is as three to seven, or thereabout; it is dissolvable by all strong Acids, and when exposed to the Focus of a strong Burning-Glass on a Tile presently melts, and then becomes a brittle half vitrified Substance, but if laid on a Piece of Charcoal in the same Focus, it melts and flies all off in Sparkles. It consists of a bituminous inflammable Principle, a vitriolick Salt, and a vitriolick vitrifiable Earth. This Earth united with any inflammable Substance by Fire, will become Iron, which accordingly is seen in burning inflammable Bodies, in the Ashes of which Iron discovers itself to the Magnet, tho' no Signs of Iron are before discoverable in these Substances, even when reduced to the finest Powder.

That the vitriolick Salt is likewise in considerable Quantity, is evident from the Solubility of Iron in simple Water, from the Taste of the Water in which Iron had been in Part dissolved, and from the Heat which Filings of Iron conceive on often sprinkling with Water, which arises from the Action of these Salts on the metallick Earth.

For medicinal Uses Iron is preferable to Steel; the simple Powder of the Filings is by many said to be better in many Cases than any Preparation of it; the Salt, which is also much used, we make by putting warm Water acidulated with Spirit of Vitriol on the Filings of Iron, and after a warm Infusion of twenty-four Hours, filtrating the Liquor and evaporating it to a Pellicle, and setting it in a cool Place, where it yields us a Salt in beautiful green Crystals.]

5. Of Quicksilver.

THAT which we call *Quicksilver*, crude and running Mercury, Hydrargyric, liquid Silver, the *Proteus* of Nature, the fugitive Salt, or the mineral Spirit, is, according to Mr. Charas, a metallick, or mineral Liquor, of a volatile Nature, found in the Mines, and composed, as is believed, of a white sulphureous Earth, and of its own proper internal Mercury. Some Authors, and Mr. Charas amongst the rest, say, that Mercury is not to be placed in the Rank of Metals: they have

have given it the Name of a Semi Metal, because it is neither hard nor malleable as the true Metals are, yet it easily unites itself to any other Metal, especially to Gold, to which it often serves as an Intermediate to join it to other Metals. Its Colour of Silver, and the Disposition it has to Motion, is the Reason why they call it *Quicksilver*; from the same Colour, and its Fluidity, it is named *Hydrargyrum*, that is to say, watry Silver, or water Silver. They call it *Mercury* from the Analogy which it is supposed to bear to the Planet of the same Name, or because of the Variety of the Shapes it can take, suitable to what the Heathens represented of that Deity. It is likewise for the same Reason, and the Diversity of Colours that may be given it, that it is named *Proteus*; and from its Fluidity and Volatility, it is called the *Fugitive Salt*.

Quicksilver is found in the Mines after different Manners, sometimes inclosed in its own Mineral, and sometimes as fluid as we see it; and this because it is found so naturally, some have given the Name of *Virgin Mercury*; they find it sometimes amongst Earth and Stones, and very often embodied in a natural Cinnabar, as we shall see hereafter. They who take Quicksilver from its Ore, make use of great Iron Retorts to separate it from its Mineral, or the other hard Bodies with which it is joined, and by the Means of Fire and fresh Water, into which it falls, they render it fluid, so as we commonly have it. The Ore of the Mercury is so like Antimony of *Poictou*, that if it were not for the Rays or Streaks, which are somewhat whiter, there is no Body that could find the Difference; when it is found running or liquid in the Ground, the Slaves who take it up have nothing to do but make it run through *Chamois* Leather to cleanse it from its Impurities. There are but few Places in *Europe* from whence they take Quicksilver, which are *Hungary* and *Spain*, and the Mines of *Frioli* which belong to the *Venetians*. The Quicksilver Mines are so deep, that I have been informed it is a Work of five Hours to descend into them. The *Frioli* Quicksilver is brought into *France* by Way of *Marseilles*, that of *Hungary* is carried to *Vienna* in *Austria*, and from thence to *Holland*, from whence we have it. That of *Spain* is transported to *Pernu*, to serve to purify their Gold and Silver, as I have observed before. The *Spanish* Quicksilver was once common enough in *France*; this Quicksilver being put upon Silver a little heated, had the Property of gilding the Superficies, and of giving the Silver a very fine Gold Colour; this rich Quality, according to some Alchymists, which in Reality is nothing, and the Difficulty there is of having it at present, because

the King of *Spain* has expressly prohibited the Transportation of it into other Countries, has made it so scarce as it is at present, as well as the natural Cinnabar. Some modern Authors have said, that there is Quicksilver found in the *Indies*, *Poland*, *Germany*, and even in *France*; which perhaps may be true: But notwithstanding all the Pains I have taken, I could never discover the Truth of it. It is true indeed, that a Mine of Cinnabar was lately found in *Normandy*, between *St. Lo* and *Charenton*, near a Place called *Le Fosse Rouge*; but the great Charges of it obliged them to stop it up again. It is an Observation of Mr. *Lemery's*, that Quicksilver is usually found under Mountains covered with white Stones, which are as brittle as Chalk. The Plants which grow upon these Mountains seem greener and larger than elsewhere, but the Trees which are near the Quicksilver Mine, rarely produce Fruits or Flowers, and their Leaves come out later than in other Places.

One of the Signs that discover a Mine of Quicksilver, is when in the Month of *April* or *May* there come thick Mists or Vapours out of one particular Place, which cannot rise far in the Air because of their Weight: It is to such a Place that they go to look for this Metal, and especially if by chance it is situated opposite to the North Wind, for then they think the Mine will prove the best. They likewise find a great deal of Water about these Mines, which it is necessary to draw off at the Foot of the Mountain, before you can come to work them.

Chuse such Quicksilver as is white, running, clean, of a lively and beautiful Water, and reject that, which being put into any Copper Vessels, such as Scales of a Balance, or others, appears like Lead; that is to say, when its Colour is brown, and it leaves Tails or Trains behind it, as if it were roapy, or sticks to the Hands when you handle it; which is of no small Consequence, because the greatest Part of the Quicksilver that is consumed, is made Use of by Looking-glass-Makers, Goldsmiths, Burnishers, Gilders, and others; and if by Mischance or Roguery, in such a Parcel of Quicksilver, as is used at one boiling, there should be one Pound of Lead, it would spoil all their Works.

Besides the Qualities before-mentioned, which ought to be in Quicksilver, one may prove it by putting a little of it in a Silver Spoon, and letting it evaporate over the Fire; if there remains a yellow Spot, it is a Mark that it is natural; if it leaves a black one, it is a Sign that it is mixed with Lead or Tin. Quicksilver is a Matter so very weighty, that Mr. *De Pureau* says, that a solid Foot of Mercury weighs nine hundred forty seven Pound, and that a cubical Foot of the *Seine* Water

Water weighs but seventy Pound; that is to say, a Vessel which will hold thirty five Pints of the Water of the River *Seine*, according to the *Paris* Measure, will contain nine hundred forty seven Pounds of Quicksilver. As *Quicksilver* is so extremely weighty, so it is no less strong; since a fifty Pound Weight of Iron being put upon a Bouillon of Quicksilver, which, as it comes from *Holland*, is generally a hundred and threescore or fourscore Pounds, it shall no more sink in it than if it were an Ounce, which I could never have believed, unless I myself had seen it. As to the Properties of Quicksilver, they are so great, that they exceed Imagination; some Persons pretend, that a Drachm Weight of Quicksilver has the same Effect as any greater Quantity whatever; and that if they prescribe it in large Doses, as they do sometimes, especially in the *Miserere*, or Twisting of the Guts, it is only that it may pass the faster, and disentangle the Bowels. It is likewise a surprising thing, that into whatsoever Shape you metamorphose Mercury, you may make it return to its first State of Nature, and that with a very small Diminution. *Borrichius*, a *Danish* Chymist, says, in his Book of Chymistry, that having operated upon some Mercury for a Twelvemonth together, and having reduced it into several Forms, it took its own Shape again in the Fire, at last, by the Means of a little Salt of Tartar. The great Consumption of Quicksilver, especially in *France*, is the Reason why the *Dutch* have raised it two *Stivers* of their Money in the Pound, which is three *Sous*, or three Pence of ours. And since they have, for a long Time, engrossed that Merchandize, it is not sold there under six and thirty *Sous* the Pound. I shall not here recount the several Virtues that are attributed to this Metal, because several Authors have treated of them, nor decide the Controversy, whether it be cold or hot; but I must say this, that it is so cold, externally, that it is impossible to hold one's Hand in a Quantity of Quicksilver for the Space of a Quarter of an Hour. It is wrong to think, as some modern Authors have written, that the *Dutch* turn Mercury into Cinnabar, to transport it into other Places, and that for these three following Reasons: *First*, Because Quicksilver is easily transported in Sheep Skins, put into Barrels, and filled up with Straw or Shavings. The *second* is, that if we were obliged to revive Cinnabar into Mercury, we could not afford it at the Price we do: And all the Mercury that is reduced in *Holland* into Cinnabar, is used in *France* and other Places as Cinnabar, at least there are only some very curious People, who resolve to have their Mercury pure and neat, who give themselves the Trouble to revive it. In the *third* Place, when

the *Dutch* have a Mind to make their Quicksilver portable, they fix it very easily, and put it into all sorts of Vessels, even into Paper, and send it to them who have the Secret to make it run again without any Charges.

Quicksilver, called in *Latin Hydrargyrum*, *Mercurius*, *Argentum Vivum*, and by the Chymists *Azoth*, is a Metal, or Semi Metal, fluid, running, of the Colour of Silver, very weighty, and yet volatile, penetrating, uniting, and amalgamating itself with Gold and Silver. It is found in several Mines in *Europe*, as in *Hungary*, and in *Spain*; and there is one Mine discovered about forty Years since in *Normandy*.

As Mercury is a very fluid Body, so it is more difficult to be taken up than other Metals, for it insinuates itself into Earths, and into the Clefts of Stones, so that you often lose the Sight of it when you think you are just going to take it up. People are forced to go very deep in the Ground to find it, and the Men cannot work very many Years at it before they have the Palsy; so that few are employed in it but Criminals condemned to Punishment.

The Quicksilver is not always taken out of the Mine neat and running, but it is generally mixed with Earth, or reduced into a natural Cinnabar by some Portion of Sulphur that it had met with. That which has but a little Earth with it may be separated by making it pass through Leather; but when it has a great deal of Earth, or other Impurities, it must be put into Iron Retorts placed upon a Furnace, to which they fit a Recipient full of Water, and blow the Fire under the Retort till it becomes fierce, and makes the Mercury distil into the Water. Iron Retorts are the most preferable on this Occasion, because the Quicksilver endeavouring to get to this Metal, separates itself the more willingly from the Earth, and is the more disposed to be rarified and pushed on by the Fire.

One is not always assured of the Purity of the Mercury that is sold by the Merchant, for it may be vitiated by some Mixture which was made in the Mine, and could not be separated by the Leather; or by the Addition of Lead, or some other Metal or Mineral, that the Sophisticians may have put into it: it is therefore necessary to purify it before you use it.

The Method of the Ancients to purify their Mercury, and, as they said, at the same Time to correct its cold Quality, which they said it had in the fourth Degree, was by mixing it in a Stone Mortar, with Salt and Sage in Powder, and beating this Mixture for an Hour together with a wooden Pestle, and afterwards straining it through a Skin:

by this Means they rendered it clear and beautiful: But they had only taken off a superficial Impurity which was of no Consequence, which the Quicksilver by rolling about contracted in the Vessels of Leather or Earth it was kept or transported in: If there were any Metal or metallick Matter in the Quicksilver, it would pass with it through the Pores of the Skin, and that could make no Separation of it; as for the pretended cold Quality of the Mercury, that could not be corrected by this Preparation, and in short the Metal continued in much the same Condition as before.

The sure Means of having Quicksilver as pure as it is possible, is to revive it from Cinnabar after the following Manner:

Mix together two equal Parts of Powder of Cinnabar, and Filings of Iron, and fill about a half, or two thirds of a Retort with them, place it on a reverberating Furnace, and fit to it a Glass Recipient full of Water, without luting the Joints; encrease the Fire to the fourth Degree, you will find the Quicksilver distil and fall to the Bottom of the Recipient; keep it on the Fire till no more will rise, and you will have got thirteen Ounces of running Mercury, from one Pound of Cinnabar; wash it, and having dried it with Linen Cloths, strain it through Leather. We may be secure that this Mercury is pure, because if any Portion of Metal or Mineral had been mixed in the Mine with the Quicksilver, of which the Cinnabar was made, it would have remained at the Bottom of the Vessel, and would not have been able to rise with the Mercury and the Sulphur; and if after the Sublimation any strange Body had been mingled with the Cinnabar, this Impurity, of what Nature soever, would be separated by the Revivification or Distillation that I have been speaking of. The Recipient must be filled with Water, that the Mercury which ascends in a Vapour from the Retort, may by the Coldness thereof, be condensed into a Liquor; but the joining of the Recipient with the Retort, must not be luted, because that in the Distillation there always arises a great Quantity of Sulphur from the Cinnabar, which would mix itself with the Mercury, if it could not find a Place to get out at, and would reduce it to a Sort of grey Paste, so that it would be necessary to distil it a second Time.

The Iron, upon this Occasion, serve as an Alkali to separate the Acids of the Sulphur, which held the Mercury in the Cinnabar; and this Mercury being disengaged from its Bonds, comes into a Condition of being rarified and pushed on by the Fire. Quick Lime produces the same Effect as the Iron, but then there must be thrice the Quantity.

The Fluidity of the Mercury proceeds from this, that the insensible Particles, of which it is naturally composed, are all spherical or round; for their Figure rendering them incapable of hooking one into the other, they roll about continually. The same Reason explains why this Metal, though it be so heavy, should easily be volatilized by the Fire; for its round Parts being always disunited, and having no Tie of one to the other, are all severally light, and in a proper Condition to be pushed forward, and elevated by the Fire. That which makes the Solidity and Firmness of other Metals is, that their insensible Particles having divers Figures, are so hooked, bound, and exactly united one to the other, that the Fire has no Power to separate them, so as to let them be elevated.

Quicksilver is a Remedy for the *Miserere*, in which the Patient swallows a Pound or more: It is voided by Stool, without any Alteration.

They use crude Mercury to kill the Worms, they boil it in Water, and then give the Patient the Decoction to drink, which must have taken but a very small Impression let it have boiled never so long; for the Metal is found to be of the same Weight, and the Decoction has no other Colour, Taste, or Smell than common boiling Water; and yet it does not fail of producing a good Effect. Care must be taken that the Vessel in which the Mercury is boiled be of Earth or Glass, and not of Metal, because the Quicksilver would penetrate it. Mercury kills Lice and other Insects that infect the Body; it cures the Itch, Tetters, and venereal Distempers. It resolves and dissipates hard Tumours in the Glands and other Parts. It removes Obstructions, applied outwardly or taken inwardly. It is used in the Composition of several Unguents and Plaisters. It is one of the best Remedies in Physick, to dissipate and eradicate the grossest, most foul, malignant, and inveterate Humours.

One of the most surprising Effects that Mercury produces, is to raise a Salivation, and so carry off the very *Radix* or Root of the Distemper in all venereal Foulnesses. To explain this, it must be considered, that the venereal *Virus* consists in a Humour that is salt or acid, tartarous and gross; which fermenting by Degrees, corrupts the Blood and other Humours, and causes all the ill Accidents that follow it.

The Particles of Mercury which enter into the Body, either by Frictions of mercurial Ointments, or by the Mouth, being rarified, are distributed as a Fume, and apply themselves particularly to the *Virus*, because this acid Matter is more capable of uniting with them than any other Substance. They penetrate the Venom, and are penetrated by

by its acid Salt, almost in the same Manner as it happens in the Mixture that is made when one would prepare the corrosive Sublimate. The Heat and the Circulation of Humours soon make this Mixture of Mercury and Acid elevate and sublime itself to the Brain, as the Fire elevates the corrosive Sublimate in a Matrafs, upon which the Head, the Gums, the Palate, and the Tongue, are ulcerated; the salivary Vessels are relaxed; and there are the same Pains as if the corrosive Sublimate was put upon some Part that was excoriated. These Accidents are accompanied by a copious and involuntary Salivation, which is maintained by the Acrimony of the Humours that descend from the Brain, and the Relaxation of all the salivary Vessels. This Flux continues till all the acrid, virulent, and mercurial Humours are evacuated.

Since there is nothing able to subdue these venereal Distempers so speedily, safely, and effectually as Mercury, it will be necessary to see the several Ways, by which it may be prepared as well for external as internal Uses.

An Ointment, called the Neapolitan Ointment, is prepared after the following Manner for external Uses.

Take of Quicksilver, cleansed and strained through Leather, three Ounces; kill it in a marble or wooden Mortar, with a sufficient Quantity of the Oil of Turpentine, adding of Hogs-Lard, six Ounces; beat the Mercury and the Lard well together, until the Quicksilver disappear, and make an Ointment to raise a Salivation after the following Manner:

First bleed the Patient once or twice, or oftner, if you see Occasion for it; then purge him according to the Strength and natural Constitution of his Body, making use of a Bath, half Bath, and Broths, with proper and suitable Herbs, so as to render the Humours more fluid, and fitting to rise upon a Salivation, taking Care that the Salivation be raised, carried on, and promoted leisurely and gradually; for in this respect most of our old Surgeons have erred, and not a few of our late Surgeons do still err, in raising a Salivation too hastily, and to such a Height, that the Mouth, Tongue, and Tonsils are frequently seized with a Gangrene; wherefore a Salivation ought to be raised by Degrees, and the Mouth often looked into, so as that the Signs of an approaching Salivation may be duly and clearly discerned: Wherefore placing the Patient before a good and clear Fire, being first covered with Clothes suitable to his Distemper, begin the Friction at first with half an Ounce of *Neapolitan Ointment*, anointing him from the Soles of his Feet to the Calves of

his Legs. Upon the second Night use about two Ounces more of the same Ointment, in anointing him from the Calves of his Legs to his Knees: And upon the third Day let him rest, especially if you perceive the Signs of an approaching Salivation, that is, an extraordinary Heat and Dryness of the Mouth, a Swelling of the Gums and Salival Glands, attended with a frequent Spitting. Upon the fourth Day, having searched the Mouth to try whether the Orifices of the Excretory Vessels be seized with an Inflammation, or small Ulcers, another Friction is to be performed with two or three Ounces of the Ointment, anointing from the Knees to the Middle of the Thighs; and upon the fifth Day the Patient is to rest again, abstaining from the Use of the Ointment, especially if you observe the Ulcers to enlarge, and a laudable Salivation to come on; but this depends upon the Nature of the Distemper, and the Strength of the Patient; for some require but four Frictions, others more; and nothing is more to be feared and avoided than too high a Salivation: If a fourth Friction be required, it is to be performed with two or three Ounces of the Ointment, anointing from the Middle of the Thighs to the Loins, Hips, and privy Members; and if a Friction should happen to be required a fifth Time, you are to anoint the Hips and privy Members over again, extending to the Arms, and all the upper Parts of the Body, except the Head, Neck, and Breast.

If the Tonsils should happen to be seized with a Gangrene, by Means of too high a Salivation, then having taken away some Quantity of Blood, you must instantly have Recourse to Purgation, than which there is nothing more effectual; and it is to be frequently repeated, if necessary, and the Clothes wherewith the Patient was covered, during the Time of the Friction, must be taken off. Such a Salivation is approved of, whereby about two or three Pints of a viscous or glutinous Humour are discharged every Day, and which is fully accomplished in the Space of twenty or twenty-five Days, or a Month at farthest. After the Salivation is over, the Patient is to be exposed to the Air, and refreshed and recruited by the Help of a Bath, Broths, and Foods of a good Nourishment; or else he must make use of a Diet-Drink made of the sudorifick Woods and Roots for some Time after.

Some raise a Salivation by Emplastration, making use of the Plaister of *Figs*, otherwise called the Plaister of Frogs, with a fourfold Quantity of Mercury. Others raise it with the Fumes of Cinnabar; and this is called fumigation, which is a very good Way, especially for such as are troubled with Warts, Chaps, and Swellings about the Fundament.

Salivation

Salivation is also raised by the Help of crude Mercury taken at the Mouth.

Take of crude Mercury an Ounce, well cleansed and killed with *Venice Turpentine*; of the Conserve of red Roses, half an Ounce; of red Coral prepared, half an Ounce; of which take from half a Drachm to one or two Drachms, till such Time as a due Salivation rises.

The most common Preparations of Mercury for the venereal Distemper, are these which follow: Sweet Sublimate, or *Mercurius Dulcis*, or the white Eagle; the mercurial *Panacea*, Turbith Mineral, Mercury Precipitate, white, red, and green, &c. for Mercury, like *Proteus*, can be changed into several different Shapes and Colours, but by the Force of Fire it still returns again to its own Nature, which the Chymists call Reviving.

Sweet Sublimate is thus prepared: Take of Sublimate Corrosive Mercury, and of crude Mercury, of each what Quantity you please; mix them well together, and put them in a Glass Body, to the Height of one Finger, or two; then sublime them with a slow Fire gradually, and separating the Sublimate from its Dregs, powder it over again, and sublime it three or four Times over, mixing it well; and this is called *Sweet Mercury*, or the *White Eagle*.

The *Panacea* of Mercury is made by subliming of Mercury ten or twelve Times over. This *Panacea* will sooner raise a Salivation than sweet Mercury, which is sometimes apt to purge downwards. They are both of them prescribed from ten Grains to half a Drachm.

Take of Sweet Mercury twelve Grains, powder it, and make it up into a *Bolus*, with a sufficient Quantity of the Conserve of Roses, or the Mucilage of Gum Tragacanth, to be given at nine o'Clock at Night, giving the next Night fifteen Grains, and the third Night twenty, till the Salivation be duly raised.

The *Panacea* of Mercury is to be used after the same Manner, by encreasing the Dose of it gradually, according to what Height you have a Mind to raise the Salivation.

A great many use to prescribe sweet Mercury one Day, and a purging Potion upon the other Day, endeavouring by that means to cure the venereal Distemper without Salivation; or else they mix sweet Mercury with Purgatives, and give it in Pills, Bolus's, or Electuaries.

Take of sweet Mercury and *Diagrydium* of each a Drachm; of Lozenges of *Coloquintida* a Scruple; powder them, and with a convenient Quantity of *Venice Turpentine*, make a Mass of Pills for five Doses.

White precipitate Mercury is thus prepared: Take of Mercury well cleansed and strained four Ounces; dissolve it in a large Matraass or Cucurbit, with three Ounces of Spirit of Nitre; adding to the Solution, of fair Water two Pounds; and pour again upon this last Solution, of salt Water two Pounds; and then the Mercury will, by little and little, precipitate or fall to the Bottom in the Form of a white Powder, which is to be sweetened by often washing, drying, and burning, or kindling Spirit of Wine upon it. The Dose of the Powder inwardly, is from four Grains to half a Scruple.

But outwardly it cures the Scab, and other cutaneous Distempers, being used after the following Manner: Take of white Precipitate one Drachm; of the Ointment of Roses one Ounce; mix, and make an Ointment.

Yellow Precipitate, or Turbith Mineral, is thus prepared: Take of crude Mercury four Ounces; pour upon it of Spirit of Vitriol or Sulphur one Pound; put this Solution into a Retort, with a large Receiver, set it upon a slow Fire, and draw off all the Liquor, until it is dry, and so the white Mass will be obtained, which is to be powdered and dissolved in boiling Water, and then the Mercury will gradually precipitate in the Form of a yellow Powder, which is to be sweetened by washing, and burning upon it Spirit of Wine. This Powder is to be given from three Grains to four or six. It purges vehemently, both upwards and downwards, but it safely and speedily cures the *French Pox*.

The *Arcanum Corallinum*, the Coralline Secret, or the Dragon devouring itself, called also *Lampandra*, is, without any Addition, performed in the Space of two Months, by digesting Quicksilver in an earthen Pot with a long Neck, by the Help of a Lamp; for the Mercury is by that Means changed into a bright red Powder, to be given from four Grains to six or eight, provided it be first sweetened by burning Spirit of Wine upon it, otherwise it often provokes Vomiting.

[Quicksilver is sometimes found fluid in the Earth, but commonly in Glebes, or in Form of a red sulphureous mercurial Mineral, called Cinnabar, or of a stony Glebe, sometimes red, sometimes yellowish, sometimes dark, and sometimes of a Lead Colour. It is extracted from these Glebes, sometimes by the Retort, but oftener and more expeditiously by a kind of Distillation *per decensum*; the Miners beat it small and put it into narrow necked earthen Vessels stopped with Moss; other such Vessels, only with wider Mouths, are buried in the Ground, and the Necks of the first are put into these others: in this Position their

their Necks are firmly cemented together, the lower Vessels being wholly under Ground, and the upper, which contain the Quicksilver Glebe, and are inverted, wholly above Ground. An Area of a sufficient Extent being filled with those double Vessels, a Fire is lighted round them, by means of which the Quicksilver drains thro' the Moss into the lower Vessels. They afterwards dig them up and put the Quicksilver into Bottles.

The Mines in *Hungary*, *Carinthia*, and *Friuli*, are very rich. When the Cinnabar contains a great Proportion of Sulphur, the Quicksilver cannot be extracted without something to absorb the Sulphur, and set the Quicksilver at Liberty and render it fluid, as the Addition of Pot-ashes, Lime, Filings of Iron, or the like.

Quicksilver is the heaviest of all Metals next to Gold, which is to Mercury in specific Gravity nearly as four to three, and therefore sinks in it, whereas all other Metals swim on it; it may be amalgamated with all other Metals and metallick Substances, but most difficultly with Iron, Copper, and Antimony; it penetrates Metals, and dissolves or makes them brittle, it readily unites with Sea-Salt, but not so easily with Nitre or Vitriol, it easily is dissolved in Spirit of Nitre but more difficultly in Oil of Vitriol. It is very difficult to analyse Quicksilver, because as soon as any considerable Degree of Fire is applied to it, it flies off, but by a very gentle Heat, does in Time change it into a greyish Powder, which afterwards turns yellowish, and lastly red. Exposed to the Focus of a strong Burning-glass, it presently evaporates in Fumes without leaving any Remainder, but if the Calk before mentioned, be laid before the Burning-glass on a Tile, it first melts into a Substance like Glass, and then speedily evaporates, leaving a little of a brownish Powder behind, which afterwards vitrifies; if it be laid on a Piece of Charcoal it melts into Glass, then runs on the Coal, and becomes again pure Quicksilver before it evaporates: Hence it seems evident, that Quicksilver consists of a volatile vitrifiable Earth and Sulphur, to which it owes its Splendor and Fluidity, for when deprived of its Sulphur by Calcination, it loses both its Colour and Fluidity, but if these Particles of Sulphur be again restored to it, it recovers both again. Quicksilver was by the Antients reckoned a Poison, *Dioscorides* ascribes pernicious Effects to it, and *Galen* from his Authority reckoned it highly corrosive, for he says, he never tried it himself; the Name of it is not to be found in *Hippocrates*, whence it is to be supposed it was not in use in his Time. It is but about two hundred Years ago, that it got into Practice generally, and that from an Observation, that Shepherds gave it to their Cattle

with Safety for the Worms. *Jacobus Carpenfis*,^a Physician of *Bologna*, was the first who cured venereal Diseases with it.]

6. Of the mineral or natural Cinnabar, and likewise of the artificial Cinnabar.

THE mineral *Cinnabar* is a red Stone, *Pomet.* heavy and shining, which is found in many Places of the World, but the best and most esteemed comes from *Spain*. I have taken a great deal of Pains to find the true Name of the Place where *Cinnabar* is found; a worthy Person has assured me, that he himself had seen and gathered it, and that the best was that of *Andalusia*, upon the Lands of the Fathers of *St. Jerome*, and that it was there as common as Free-stone is with us. But Mr. *Charas* has informed me, that the great Mines of *Cinnabar* lie in the Mountains of *Sierra Morena*, and that the King of *Spain* maintains a great many Workmen there at his own Expence and Charges, to get the Mercury thence and send it to *Peru*. And as this Relation seems to me to be most probable, I take it for certain, that the large Quantity of *Spanish Cinnabar* that we had heretofore, and the smaller we have had lately, came from the Mountains of *Sierra Morena*; and the Cheapness of it, at one Time, sufficiently shew us that it was not difficult or expensive to take it out of the Mines, which may in some Measure favour the Sentiments of that Person who told me that it was found as commonly as Stones, and that it cost nothing but the gathering.

The natural *Cinnabar* is to be chosen of a high Colour, the most shining, and with as little Stone as possible; but since the true *Spanish Cinnabar* is become so scarce in *France*, there are so many Sorts of the other, that it is difficult to describe them all, tho' nothing is at present more common, than to ask for the right *Spanish Cinnabar*; they who sell it, make no Scruple of giving one for the other, and so put off for it that of *St. Lo*, tho' very different, because that of *Spain* is of a bright red Colour, and that of *St. Lo* of a dull one, and is less abounding in Mercury; some Persons indeed, on the contrary to this, which is the generally received Opinion, have maintained, that that of *St. Lo* would yield fourteen Ounces of Mercury out of the Pound, as well as that of *Spain*, which I cannot contradict, because I never tried it.

The mineral *Cinnabar* of *Spain*, though much demanded, has no other Property, that I know of, but that of yielding a pure Quicksilver, with which Alchymists make Vermillion, and pretend

that

that they can make even Gold itself, by fixing it, and giving it a Tincture; for in respect of the Weight, it comes very near the true Gold. Mr. *Lemery* says, the natural *Cinnabar* is a Mixture of Mercury and Sulphur, which are sublimed together by a subterraneous Heat, which is done by Nature almost after the same Manner as we make the artificial *Cinnabar*.

Mr. *Furctiere* has remarked, in his Book, that there is a mineral *Cinnabar*, which is a very red Stone, heavy, and not hard, resembling the *Hæmatitis*, which contains Quicksilver, which drops from it of itself, without the Help of Fire. He says it is found about *Carniola*, and that it is the *Minium* of the Antients, and is a Poison. He says also the Word *Cinnabar* comes from the Greek Word *Kinabra*, which signifies the Smell of Goats, which is an insupportable Smell; because when they dig a Kind of Fossil *Cinnabar* out of the Ground, according to *Matthiolus*, it casts so rank and strange a Smell, that they are forced to stop their Nose and Mouth, for fear of being suffocated by it. I should not have spoke of this latter *Cinnabar*, but that I look upon it to be a Falstiy, and to dissuade them who would believe that there is natural *Cinnabar*, from which the Mercury flows naturally.

There are so many Kinds of natural *Cinnabar*, that it would be difficult to name them all, but those of *Carinthia*, *Armenia*, *St. Christophers*, &c. are all much inferior to that of *Spain*.

The artificial *Cinnabar* in the Stone, is a Mixture of Mercury and Sulphur sublimed and reduced to a Stone, in the Manner we see it. It should be chosen in fair Striæ, and the highest in Colour that can be had.

The Use of *Cinnabar* is, as I have said, to draw thence a Mercury, for those who would have it clean and neat, as well to make the mercurial *Panacea*, as for other Operations where Mercury revived from *Cinnabar* is necessary.

Cinnabar in Stone is also of Use to Painters, after it is ground, because it is of a more lively red than that which comes ready ground from *Holland*; but that which is troublesome in it, is, that it dries very difficultly. It is likewise of some Use in Physick, as well in Fumigations, as other Forms, both inwardly and outwardly; tho' *Cinnabar* is seldom used inwardly but for Horfes, to make a Composition, called the *Cinnabar* Balls.

All the *Cinnabar* we have, both whole and ground, comes from *Holland*. And it is a surprising Thing, that they who make it, do it in Cakes of three or four hundred Weight, which they do easily, by putting into the Vessel twenty-five Pounds of the Materials, that is to say, of the Sulphur and Mercury together; and when they are sub-

limed, putting twenty-five Pounds more, and continuing after the same manner, till the Vessel is full; and this is the Reason why the *Cinnabar* we see is disposed in several *Strata*.

As for Vermillion, it is *Cinnabar* ground with Urine or *Aqua Vitæ*, or common, or Sea Water, after it is dried, transported to different Places.

There are two Sorts of Vermillion brought from *Holland*, the red and the pale, which happens according as they are more or less ground; for the more it is ground, it is the finer, but the paler is most used by those who use it in making Sealing-Wax.

That Vermillion is to be made choice of that is well ground, dry, the least earthy, and the most pure and clean that may be. It is certain that the *Dutch*, when they grind their Vermillion, mix it with red Lead, or some other drying Drugs, because *Cinnabar*, when ground here, is difficult to dry, whereas it is otherwise in that which comes to us ready ground.

Vermillion is much used in *France* by them who make Sealing-Wax, Painters, and other Workmen. But Care must be taken not to use *Cinnabar* ground, and mixed with any fat Substance, to paint the Face; because, as Mr. *Lemery* has well remarked, there is a great deal of Danger in it; and ill Accidents may attend it; the *Spanish* Wool may be used instead of it with Safety, as being made of nothing but *Safranum* of the *Levant*.

They draw from *Cinnabar*, or Vermillion, by the Help of Fire, and the Filings of Steel, or Quick-Lime put into a Retort, a Quicksilver that is very pure, and proper for all Uses where Quicksilver is requisite; but as it is very dear, because of the Expence, every body, except they be very curious, make use of that of *Holland*. This Mercury ought to be extremely white and lively.

Cinnabar is a mineral Matter, solid, hard, weighty, bright, crystalline, of a *Lemery*. very red Colour, distinguished with Streaks, shining and sparkling like Silver, composed of a Sulphur, and Quicksilver, and a little Earth. That which is impure, and of a yellowish Colour, mixed with a stony Matter, is to be rejected, as not being the true kind of *Cinnabar*, but rather a kind of *Auripigmentum*, or Orpiment.

There are two Sorts, one natural, called mineral *Cinnabar*, the other artificial, called simple *Cinnabar*. The natural is found formed in Stones that are red, shining, and weighty, in the Quicksilver Mines of *Spain*, *Hungary*, *Germany*, *France*, and other Parts: That of *Spain* is accounted the best. That which is most weighty, clean, red, and shining, is to be preferred, because the higher its Colour, the more Quicksilver it contains. The natural

natural *Cinnabar* has been sublimed by the subterraneous Fires, almost in the same manner as the artificial *Cinnabar*; but as in its Sublimation it is mixed with the Earth it meets with, it is not so weighty, pure, nor beautiful as the artificial, and contains less Mercury.

The artificial *Cinnabar* is made with three Parts of crude Mercury, and one Part of Sulphur, mixed and put into subliming Vessels over a gradual Fire. It ought to be made choice of in fair Stones, very weighty, bright, with long, clear, and fine Points, of a brownish red Colour. Each Pound of *Cinnabar* has fourteen Ounces of Mercury to two Ounces of Sulphur. Artificial *Cinnabar* being ground upon a Porphyry, is reduced to the finest Powder, of a most beautiful red Colour, made use of by Painters, and those who make Sealing-Wax.

These *Cinnabars* are made use of in Epilepsies and Asthma's; to take inwardly from two Grains to half a Scruple.

Take of native *Cinnabar* six Grains; of the Conserve of Lime-tree Flowers one Drachm. Make a *Bolus* to be given in the Falling-Sickness.

It is to be observed, that native *Cinnabar*, though it has been used and tried by a great many, will not raise a Salivation; whereas the other Kind of *Cinnabar* will do it speedily and easily, which truly ought to be attributed to the large Quantity of Earth, with which natural *Cinnabar* abounds, that restrains it from subliming or rising high enough for that Purpose.

If native *Cinnabar* be required to be made use of in Distempers of the Brain, and be not to be had, the *Cinnabar* of Antimony ought to be employed instead of it, rather than the fictitious or artificial *Cinnabar*; for this is more properly used in venereal Distempers, and chiefly by way of Fumigation.

Some chuse the *Cinnabar* of Hungary, as being the most solid and heavy, replenished with the best Sulphur and Mercury.

Native *Cinnabar* being ground into an impalpable Powder, is almost an universal Medicine, and may be given from ten to thirty or forty Grains, or a Drachm, in any convenient Vehicle, for forty, fifty, or sixty Days together, taking it always at Bed-time. It may be taken two Days together, and sometimes three, the next Day purging after it, and so to continue till thirty, or even fifty or more Doses are taken.

It is an excellent Antivenereal; and being taken inwardly, expels the Pox, and all its Foulness out of the whole Body, and all its Juices. It sweetens the Blood, takes away all manner of Pains and Aches in any Part; all manner of Swellings, Ulcers, and nocturnal Pains; kills Worms in Young and Old; is a Specifick for the Falling-Sickness,

as said before, and is excellent for Vertigoes, Apoplexies, Palsies, Lethargies, and all Diseases of the Head and Brain.

The artificial *Cinnabar* is thus made: Take common Sulphur, in Powder, four Ounces; melt it in an earthen Pan upon Coals; add to it a Pound of Quicksilver; stir them continually with an Iron *Spatula*, till they are united in a black Powder, and the Mercury ceases to appear; being cold, grind it in an Iron Mortar to a subtile Powder; put this Powder into a Glass Retort well luted, and distil with a naked Fire; first with a gentle Heat, then with a stronger; then in a few Hours the Mercury and Sulphur will sublime into the Neck of the Retort, the whole appearing of a greyish Red, or a dark Red Colour; beat it into a fine Powder, sublime it again, and you have a most pure red Vermillion. It has all the Virtues of the former: But Physicians have not given it inwardly so much as the former, though it be full as safe.

[*Cinnabar* was a Name given by the Antients to several different Substances, and in the Time of *Dioscorides* to a red astringent Drug brought from Africa, and supposed to be the Blood of Dragons, which was in all Probability what we call *Sanguis Draconis* at this Time; the same Name was also given to the *Minium* of the Antients, which they described to be a Mineral Substance of a red Colour, from which Quicksilver was extracted, and in after Times the Words *Minium* and *Cinnabar* were indifferently used, to signify the same thing: The true *Minium* afterwards becoming scarce, they frequently adulterated it with Lead Ore calcined to a Redness, and that calcined Substance came to be called *Minium*, and the Word *Cinnabar* became appropriated to the genuine Mineral from which Quicksilver might be extracted. And in this Sense of the Words, whatever the Antients have said of *Minium* and *Cinnabar* may be understood without Confusion.

The native or fossile *Cinnabar*, is therefore the *Minium* of *Dioscorides*; *Cinnabaris*, *Mathi.* 1355. *Lapis Minium*, *Aldr. Mus. Mel.* 627. *Minium purum seu Cinnabaris nativa*, *Worm.* 126. It is properly Quicksilver Ore: It is found sometimes pure, and sometimes mixed with Stones. Of the pure *Cinnabar* there are several Kinds, one of a purplish red, which by powdering, is brought to a most beautiful clear red, another of a dusky Colour resembling the *Lapis Haematites*, and a third of a yellowish Colour, which is commonly so rich in Quicksilver, that when heated in a very small Degree, it drops spontaneously from it; another Kind is found in a fossile Stone formed of various Laminæ of an Ash-Colour, and it has sometimes been found in a whitish Stone of a metalline Texture,

Texture, and sometimes in form of a Gold and Silver *Pyrites*, such as was dug up some Years ago, in several Parts of *Normandy*. It is also found in *Hungary, Bohemia, Italy, Spain, and France*. The Painters of old were extremely fond of it, but they seldom use it now, because the factitious Sort is cheaper, and answers all their Purposes as well. It is also given internally in Epilepsies, Vertigoes, Madness, and all spasmodick Affections; that of *Hungary* or *Carinthia* is to be chosen for this Purpose, and that which is of a sparkling shining Red, and free from all heterogeneous Particles; the yellowish Kind, though containing more Quick-silver, is to be rejected as being more impure. Sometimes, however, the best chosen native *Cinnabar* by means of vitriolick, or perhaps even arsenical Particles associated with it, happens to excite Nauseas, Vomitings, Anxieties, Heat, Burnings, &c. even after all the Cleansing that can be given it by frequent Washings; and it must certainly, therefore, be most prudent to use either factitious *Cinnabar*, or that of Antimony, instead of it.

Factitious *Cinnabar*, or *Vermillion*, is a red heavy Mass, friable, and marked with shining or silver Streaks, consisting of Quicksilver and Sulphur united by the Help of Chymistry, subliming the Mixture over a Fire.]

7. Of the Corrosive Sublimate, and other Preparations of Mercury.

Pemet. **C**ORROSIVE Sublimate, which we have from *Holland* and *Venice*, is made of common Mercury or that revived from *Cinnabar*, Spirit of Nitre, Vitriol calcined to a Whiteness, and Sea Salt decrepitated, and by the Means of a subliming Vessel reduced to a Lump that is white and shining.

That Sublimate, whether from *Holland* or *Venice*, is to be chosen, which is whitest and most shining, but the least weighty and compact that is possible; but that is to be rejected that comes from *Smyrna*, which is weighty, and full of Sparkles, because it is said that it is made with Arsenick, which I cannot affirm, because I am not certain of it; the best Way to prove it that I know, is to throw upon it a Drop of Oil of Tartar *per Deliquium*, or to rub it with a little Salt of Tartar; if it grows yellow, it is an infallible Mark that it is made of Mercury, and has the Qualities requisite to it; on the contrary, if it turn black, it is to be rejected.

Corrosive Sublimate is made use of by several Persons: as Surgeons, Goldsmiths, Farriers, and others. It is likewise used in Physick externally; but as it is one of the strongest Poisons we have,

it ought not to be used without the greatest Precautions; and the Persons who retail it ought not to sell it but to such as have Occasion for it by their Profession, as the King's Ordinances require, by which it is expressly forbid to sell any Sorts of Poisons, but to the Master of a Family: And these same Retailers are ordered to take a Note of him that buys it, declaring what he intends to do with it; and the Seller is to keep the same Drug under his own Lock and Key, so that no Body but himself may have the Sale of it. I hope this Advice will not be taken amiss, because it is designed for the public Safety.

Of Sweet Sublimate, or Mercurius dulcis.

The sweet or dulcified Mercury, or Sublimate, called likewise *Aquila alba*, or the white Eagle, is corrosive Sublimate, and crude Mercury, reduced into a white Lump, with little shining Streaks, by the Means of Fire and Glass Matrasses.

The sweet Sublimate, or dulcified Mercury, ought to be white, shining, adorned with little hard Shoots, which being put to the Tongue, is insipid; and reduced to Powder, is of a white Colour, a little upon the yellow. Great Care must be taken that it has been dulcified three Times at least; for unless it has its necessary Qualities, that is, that it be very insipid or without Taste, it may produce very ill Effects. They who bring it from *Holland*, should not so much look upon the beautiful Colour which the *Dutch* give it, as take heed that it has no Taste: For to my Knowledge there has come some from *Holland* which might have had very ill Effects, if Care had not been taken; because it had been sublimed or dulcified but once.

The sweet Sublimate is a very excellent Remedy to cure the Secret Disease, and to kill Worms in Children. The ordinary Dose is from two Grains to thirty, taken in a *Bolus*, either of some Conserves, or purgative Medicines.

Of the Mercurial Panacea.

The *Mercurial Panacea* is a sweet Sublimate made of Mercury, revived from *Cinnabar*, and dulcified or sublimated fourteen Times. I shall not be long upon this Point, because the Directors of the Hospital of the Invalids have caused a long Tract concerning it to be printed. I shall only say, that this Medicine is very much demanded and valued, as well for its Novelty, as because they pretend it is a general Medicine for the Cure of the abovementioned Diseases; and they attribute so many Qualities to it, that they have given it

it the Name of *Panacea*, which is as much as to say, the Universal Medicine. They commonly make up this *Panacea* into little Pills, with the Mucilage of *Gum Tragacanth*, and when they are dry, they differ little in Colour or Size from the Coriander Comfit.

Of the White Precipitate.

The *White Precipitate* is a Quicksilver dissolved in the Spirit of Nitre, and precipitated by Salt into white Powder. This Powder, after having been well washed and dried, is what we called the true *White Precipitate* of Mercury, to distinguish it from other Sorts of *White Precipitate*, of which one is made of corrosive Sublimate, dissolved in a Water made of *Sal Armoniack*, and reduced into a white Powder, by casting the Oil of *Tartar per Deliquium* upon the Dissolution, and afterwards washing it and drying it as that abovementioned. The third is made likewise of the corrosive Sublimate reduced to Powder and put into warm Water; and when the volatile Spirit of *Sal Armoniack* has been cast upon it, there will remain a white Powder, which after having been washed and dried, has the same Properties as the two others, which is to raise a Salivation, or to mix with Ointments or Pomatums to cure Tetters and cutaneous Distempers.

As these Precipitates, and generally all Preparations of Mercury, are violent Remedies, in which one may run some Hazard; so they ought not to be used but with great Precautions, and the Advice of understanding Persons. The *White Precipitate* of Mercury shews itself to be in a good Condition when it is white and weighty, and exhales, being put upon a burning Coal; on the contrary, if it remains upon the Fire, or runs into Lead, it is an infallible Sign that it is nothing but white Lead ground, or some other white Powder, as that of *Roan*, or the like.

The Precipitate made with Sublimate, is extremely white, and much lighter than that which is made of crude Mercury; which may seem strange, because every thing made of Mercury is generally weighty, and this is the Reason why they that do not know it will not take it, although it is as beautiful and as good as that which is made of crude Mercury.

Of Red Precipitate.

The *Red Precipitate* is Mercury dissolved in Spirit of Nitre, and afterwards put into a Glass Cucurbit in a Sand Head, to evaporate the Humidity; which done there remains a Mass, which,

by augmenting the Fire, acquires a red Colour, such as that which comes from *Holland* is of. As for those *Red Precipitates*, which are made by the Artists in *Paris*, and other Parts of *France*, they have as many different Colours as there are People who make them, and there are few of them can come up to that of *Holland*. 'Tis this which makes the greatest Part of the *Red Precipitates* which are sold, to be sometimes red, and sometimes of an Orange, or some other Colour, and never shining, unless it be that which comes from *Holland*; however, I will not say but it may be as good, though it be not as saleable. There are likewise two other Sorts of *Red Precipitate*, one of a Rose Colour, which is made when, instead of putting the Dissolution of Mercury in the Spirit of Nitre upon the Fire, they pour upon it hot Urine, and there will soon be a Precipitate of a Rose Colour, which being washed is good for the Worms or the Itch, and may serve for the same Uses as the *Red Precipitate* made by Fire. The third *Red Precipitate* is made of Sublimate dissolved in warm Water, upon which they pour the Oil of *Tartar per Deliquium*. Mr. *Lemery* says, that this Preparation of Sublimate is the true *Red Precipitate*, but that it does not act so violently as that of Mercury. These two last Precipitates are very seldom used, because the first is most in Vogue, which ought to be faithfully prepared that it may be good; and Care must be taken that it be not mixed with red Lead, which may easily be known by rubbing it upon a Piece of Gold, for if it makes it white, it is a Sign that is good, and that it is made of Mercury; but if it makes it black, it is a Proof that it retains a Tincture of Lead, and that it is mixed with it. You may likewise put it upon the Fire, and it is a good Sign if it exhales: However, I must say, that that which comes from *Holland* is most preferable, as well because it is more beautiful, and consequently more saleable, as because we can sell it cheaper, especially in time of Peace, than any that can be made in *France*.

Of Yellow Precipitate.

The *Yellow Precipitate*, or *Turbith Mineral*, is Mercury revived from Cinnabar, dissolved in the Oil of Vitriol, and afterwards with lukewarm Water precipitated to a yellow Powder, which being washed and dried, is used as a strong Purgative and Emetick.

They likewise make a *Yellow Precipitate*, by dissolving powdered Sublimate in warm Water, and pouring Lime-water upon it, and the yellow Powder, which will be found at the Bottom, after being washed and dried, may pass for *Yellow Precipitate*.

precipitate, or *Turbid Mineral*. Mr. Lemery says, this Dissolution or yellow Water, is called Phagedenick Water, or Water for Ulcers, because it is proper to cleanse and heal Ulcers. The Surgeons make frequent Use of it in the Hospitals; but the common Phagedenick Water is Lime-water into which they have put a little Sublimate.

Of Green Precipitate.

The *Green Precipitate* is made of Mercury and Copper, dissolved in Spirit of Nitre, and afterwards thrown down to a Powder of a green Colour, which is made use of to purge upwards and downwards; and, as some pretend, it is a Specifick to cure venereal Distempers.

It is observable, that the more Copper is used in this Operation, the more Acrity it has, and greater will be its Effect. This Precipitation is very little made use of, and was very little known, before the *Sieur Matte de la Faveur*, the King's Distiller at *Montpellier*, gave us a Description of it.

Of the Oil of Mercury.

The *Oil*, or, to speak more properly, the *Liquor of Mercury*, is Quicksilver dissolved in the Oil of Vitriol, and reduced into a white Mass by the Means of Fire, which being put in a Cellar, will dissolve and be reduced to Water. You may likewise make it with sweet Sublimate, and *Sal Armoniack*; or instead of *Sal Armoniack*, you may use Salt of *Saturn*, or in the Room of Salt of *Saturn*, Sugar-Candy; and so of several other Sorts enumerated by several Authors.

[The most used of all the Preparations of Quick-silver, is the *Mercurius Dulcis* (or *Calomel*, as it is called when it has undergone four more Sublimations) and that with great Reason, as it is the mildest and safest of them all; it purges gently, divides all viscous pituitous Humours, kills Worms, and is the great Remedy in venereal Diseases. The Dose is from five to fifteen Grains at Night going to Rest; but if this Method be continued for some Days without purging between, it will raise a Salivation.

The *Mercurial Panacea* of the *French*, which *Lewis* the Fourteenth purchased the Secret of making, and caused to be made public, is made of crude Mercury, purified by being first made into Cinnabar, and then revived from thence. Of this Mercury, corrosive Sublimate must be made and sublimed three Times, the two first with Sea Salt, and the last without any Addition; Part of this Sublimate is to be again reduced to running

Mercury, by distilling with *Regulus* of Antimony; and this running Mercury, mixt with the remaining Sublimate, must be made into a *Calomel* by nine Sublimations, which is to be put into an aromatized Spirit of Wine, and digested for three Weeks, and afterwards separated from the Liquor, and dried for use. It is an excellent Medicine in Venereal, and all other Cases where Mercurials are proper, and is the least purging of them all; but the Tedioufness of the Preparation makes it never to be met with.

The other Preparations of Mercury have their Virtues, and those very great, but are not to be meddled with but by those who well understand them; and indeed they are so subject to Adulterations, that they often deceive those who ever so well know what Effects they would produce if genuine and well prepared.

Of the Adulterations of the several mercurial Medicines in use, and the pernicious Effects of them, I could say such Things as those who have not so much examined into them could scarce believe, but shall not publish them here, lest, while I am warning others to beware by shewing what the Adulterations are, and how to be discovered, I teach some of our modern Chymists, as they call themselves, to be greater Villains than at present their Ignorance will permit them to be.]

8. Of Tin.

TIN, which the Antients called *White Lead*, is a white Metal which is not so hard as Silver, yet harder than Lead; it is full of Sulphur, and therefore melts easily. Some have given it the Name of *Jupiter*, because they pretend it draws Influences from that Planet. They pretend likewise, that it is formed of Silver and Lead, because in the Tin Mines there is sometimes both Lead and Silver, and sometimes Diamond-like Chrystals, which are fixed to the Rock from whence they take the Tin. These are naturally polished, squared, and pointed, and are of different Sizes, some as big as a Nut; but they are not hard, nor will they cut like true Diamonds. It is said that Tin is composed of Earth, and an impure Sulphur, a metallick Salt, and a Mercury a little finer and better digested than that of Lead, and that it is a Friend to Gold and Silver; for when they are once mixed, it is difficult to part them.

The greatest Part of the Tin which we have in *France* comes to us from *England*, in Pigs of different Weight, and especially from the County of *Cornwall*.

There are three Sorts of Tin at *Paris*; the plain

plain Tin, the common Tin, and Pewter. The plain Tin, which is the most beautiful, and the best Sort, is the *English* Tin, as it comes from the Mine; in working it they incorporate it with Tin-Glass, Rose Copper, and a little Zinck to purify it. Pewter is *English* Tin mixed with common Tin and Tin-Glass. Mr. *Lemery* has very well observed, that these Matters which are composed of stiff and brittle Parts, being united with the Tin, make its Parts firm, and render the Metal more hard, solid, and compact, and so it becomes sounding or ringing; for it is necessary that all sounding Matter should be composed of rigid Parts so disposed, that being struck upon, they should be agitated and tremble, by hitting one against the other, which cannot be done by Tin alone, because it is soft and pliant.

To know the Degrees of Goodness in Tin, they take a white Chalk that is found near *Tonnerre* in *Burgundy*, and of this Chalk they make a sort of Mould into which they pour the Tin when melted; and by Means of this Chalk the Artists know what Standard it is of, by the little Lines or Furrows found in it; or else they cast Tin Bullets in Moulds, and that which is found lightest is esteemed the best Sort, and this is the great Art and true Way of knowing. Some Authors say, that Tin or white Lead is found upon the Surface of the Earth, amongst the Sands, and in Torrents dried up; and that it is found in Grains, which being washed are cast into Moulds, in the Shape we see them. Besides the different Uses we make of Tin, the Chymists perform several Operations with it, as shall be shewn hereafter.

Besides the *English* Tin, there is some that comes from *Germany*, but it is not so good, because it is only the Refuse of that which served to tin their white Iron. We have also some brought from *Lorrain*.

Of Tin in Leaves.

Tin in *Leaves*, called by the *French*, *Appeau*, is an hammered Tin, which the *Dutch* have painted on one Side with their Varnish, making it of what Colour they please; as yellow, red, black, sky-colour, &c. The *Tin* in *Leaves* ought to be uniform, well varnished, whole, and as evenly rolled as possible. The *Dutch* send it in Boxes which hold commonly a Gross, that is twelve Dozen.

This *Tin* was once much used in *France* by the Wax-Chandlers, but at present its greatest Use there is for Coats of Arms and Atchievements used on the Death of Persons of Quality.

Of Tin in Powder.

They reduce *Tin* into *Powder* two Ways, either with beaten Charcoal, or with Chalk, as shall be afterwards shewn in the Chapter of Lead. They who work upon *Tin*, instead of grinding it to Powder, burn it, that is, calcine it, and reduce it to a grey Powder, which is that which we and the Pewterers sell under the Name of *Putty* of *Tin*, and use it to burnish their Hammers with, and others to polish their Steel Mirrors. They who would make this *Putty* extremely white, calcine it 'till it becomes of a most beautiful white Colour. This *Tin* calcined to such a Whiteness, is what the Chymists call the *Ceruse* or *Calx* of *Tin*, and others the *Spanish White*, or *Bezoar* of *Tin*.

Some Authors affirm, that *Tin* may be reduced into a *Calx* or *Ceruse* by the Help of Urine, and that the Urine acts upon *Tin*, as Vinegar upon Lead. Besides the Uses that the Chymists have for this calcined *Tin*, it is much used by the Potters, who make of it their beautiful Varnish, or white Enamel that is upon the *Delft* Ware. But it is observable, that this *Ceruse* of *Tin*, before it can be used by the Potters, must be exposed to the Weather for a Twelvemonth, that so the Air may make a second Calcination; but Care must be taken that it have no Impurities among it, because they would make so many Spots upon the Works.

Of Salt of Tin.

The *Salt* of *Tin*, is *Tin* calcined, upon which they have poured distilled Vinegar; by Means of Fire, and a cool Place, they draw thence a white Salt in little Crystals, which they make use for Tettors mixt with *Pomatum*. It ought to be dry, white, light, and in little Shoots.

Of Flowers of Tin, or of Jupiter.

They draw from *Tin* and *Sal Armoniack*, by the Help of a subliming Vessel, white *Flowers* of *Tin*. Instead of *Sal Armoniack*, others use Salt-Petre refined. They make also of the Flowers of *Tin*, by Means of the volatile Spirit of *Sal Armoniack*, or Oil of *Tartar per Deliquium*, a Magistery of *Tin*, which being dulcified, washed in Water, and dried, is of a very fine White; so that being mixed with *Pomatum*, it is used for Paint. The Flowers of *Tin* are often put to the same Uses as the Magistery.

Of the Diaphoretick of Tin.

The *Diaphoretick* *Tin*, which Mr. *Lemery* calls the *Jovial Diaphoretick*, or the *Antihætick* of *Poterius*,

Peterius, is made of fine *English Tin*, and the *Regulus* of Antimony with Iron, melted together; and afterwards, by means of Salt-Petre and divers Lotions, they draw thence a Powder which is used for Diseases of the Liver, the Small-Pox, and malignant Fevers, as the same Author tells us.

Tin is a Metal soft, malleable, sulphureous, white, shining, a little harder than Lead, and very easy to be melted. The Antients called it *Plumbum Album*, white Lead. It is taken out of the Mines of *England*, and other Places, and brought to us in Pigs. At *Paris* we have three Sorts of it.

The first is that Tin which is without Mixture, as it comes from the Mine, and this is the true Tin. The second is the common Tin, which is an Alloy of the natural Tin of Lead and Brass. The third is the founding Tin, or Pewter, which is a Mixture of Tin, Bismuth, and Copper, and a little Zinck. They sometimes put in some *Regulus* of Antimony, and its sulphureous vomitive Salt is not to be feared upon this Occasion, because it is absorbed and mortified by the great Quantity of other Metals with which it is incorporated.

Natural Tin is not founding, because it is too soft and pliant; for to render any Matter founding, it is requisite that it be composed of firm rigid Parts, which being struck, may tremble and hit one against the other; which Quality is found in the Tin which is hardened and made solid by Bismuth, or by Antimony and Copper. This Tin, when fine and well composed, is very much like Silver.

Natural Tin is looked upon as proper for Diseases of the Liver and the Womb, but I have found but little of this Virtue in my Experience of it.

[Tin is the *Plumbum Candidum*, *Kentm.* 85. *Fabr.* 16. *Plumbum Candidum* alias *Stannum*, *Charl. Foss.* 85. *Stannum Jupiter*, *Mont. Exot.* 13. There is some Confusion among the Antients about *Plumbum* and *Stannum*, Lead and Tin, as we english those Words. The *Greek* Authors often use the same Names indifferently to express both; and their Interpreters have rendered the Word *κασσίτερος*, both by *Plumbum* and *Stannum*. *Pliny* however says, that *Tern* means only what he calls *Plumbum Album*, which he makes to be different from *Stannum*, which he says is a Kind of *Plumbum Nigrum*, found in the same Veins with Silver. But either this Distinction of *Pliny* between *Plumbum Album* and *Stannum* is groundless, or else the *Stannum* of the Antients was nothing but the purer and more shining Part of the Lead, or a

Mixture of the *Plumbum Album* and *Nigrum*, or *Plumbum Nigrum* and Silver. *Agricola* mentions three Kinds of *Plumbum*, one white, which we now call *Tin*, another of an ash-colour, which is our Bismuth, and a third black, which is our Lead. Tin therefore is properly the *κασσίτερος* of the *Greeks*, and the *Plumbum Album* of *Pliny*. It is found in several Countries; but the richest Mines are in *Cornwall* and *Devonshire* in *England*: It is commonly got either in Grains, or from a stony Substance, sometimes black, sometimes yellow, and sometimes whitish. Some of these Stones are very hard, others brittle and crumbling. When it is taken out of the Mine, it is separated from the Stones and Earth by washing, and then melted and cast into Moulds. Various Substances are found mixed with Tin Ore, particularly one which is soft, and of a saponaceous Nature, soluble in Water, and containing pellucid Stones like Crystals, and some of other Kinds. Tin is the lightest of all Metals, its specific Gravity to that of Gold is as three to eight; being laid on a Tile in the Focus of a great burning Glass, it emits a thick roapy Fume in great Quantities, leaving a fine white Calx behind, which if held longer before the Burning Glass, turns to small Crystals, or little pellucid Filaments. This Substance cannot be melted any more without the Assistance of Charcoal, by means of which it is again revived into Tin. The Filings of Tin thrown into the Flame of a Candle take Fire, and make the Flame blue, emitting a Smoak and Smell like Sulphur mixed with Garlick. Hence it is evident, that Tin consists of a vitrifiable Earth, and a sulphureous Principle, mixed probably with an arsenical Salt. It melts the most easily of all Metals, but is soluble only in *Aqua regia*. The principal Preparations of it are the *Sal Jovis antisepticum Peterii*, and *Aurum Mosaicum*, but they are neither of them much used at present.]

Of natural Bismuth, or Tin-glass.

Whatever Pains I have taken to discover if there were any such thing as true natural *Bismuth*, it has always been impossible for me to find it; and all those with whom I have conversed, either by Word of Mouth, or Letter, have agreed that there was no other *Tin-glass* than that we sell, which is an artificial one, as I shall shew presently. However, I shall not be positive that there is no such thing, but only say that it has not come to my Knowledge, and therefore I cannot contradict them who have written, that *Tin-glass* was a sulphureous Marcasite, which is found in the Tin-Mines, or that

that it is a mineral Body, or half Metal, composed of the first Matter of Tin, which is yet imperfect; and that it is found in the Tin-Mines, and has a Substance that is very hard, weighty, brittle, and of a gross Grain, smooth, white, and shining. They say likewise, that it is called *Tin-glass*, because when it is beat to Powder, there appear in it several little Substances, smooth as Glass. They call it also the *Marcasite*, by way of Excellence, because it surpasses all others in Whiteness and Beauty. They say it contains an arsenical Salt, which is dangerous to be taken inwardly.

This however I shall venture to affirm, that they have all run into the Error of thinking the *Bismuth* we sell, a natural, whereas it is an artificial Substance.

Of the ordinary Tin-glass.

The common *Tin-glass*, which some call *Bismuth*, is a Mixture of Tin, Tartar, and Salt-petre, from whence, by the Means of Fire and a Crucible, they draw a *Tin-glass* very white and pure, and much whiter than the *Tin-glass* that is brought from *England*. And this Difference, as I have been told, proceeds from nothing but the Degree of Fire.

Tin-glass may not improperly be called the *Regulus* of *Tin*, since it is so in Effect. And it is a Thing so probable, nay, so sure, that the *Tin-glass* we sell is artificial, that the very Figure demonstrates it; for it is easy to see that it is a Metal melted and cast in a Mortar, warmed and greased, as they do to other Sorts of *Regulus*. And it is so true, that *Tin-glass* is artificial, that I have made it myself, and am ready to shew it to those who will not believe me.

Tin-glass should be made Choice of, that is in fine Scales, white, and easy to break; and that is to be rejected which is in little Scales, and, in a Word, comes near the Figure of *Regulus* of Antimony, as well as that which being broke in two, has some greater and some lesser Scales, and is of a dark Colour.

The Use of *Tin-glass* is for the Pewterers, who at present make use of it instead of *Regulus* of Antimony; or else for the Chymists, who from thence draw Flowers, and a Magistery, or white Precipitate.

To draw the Flowers of *Tin-glass* they calcine it, and with *Sal Armoniack*, and a subliming Vessel, draw thence the Flowers, which when dissolved in Water, and precipitated with the Spirit of *Sal Armoniack*, or Oil of Tartar, may be used as the Magistery of *Bismuth* that I am going to speak of.

VOL. II.

Of the Magistery of common Bismuth.

The Magistery of *Bismuth*, which some improperly call the *Spanish* or Pearl White, is *Tin-glass* dissolved in Spirit of Nitre, and precipitated into a white Powder, with a little common Salt, and afterwards well washed and dried. There are Peruke-makers that use this *Magistery*, for the making red Hair look of a light Colour; but this Trick will be easily discovered, because the Colour will not remain long, especially if the Peruke comes into the Rain.

The Magistery of *Bismuth* is sometimes used for the Face, by putting it into Pomatums, or diluting it with Lilly or Bean-flower Water. It is good for the Itch, because, according to Mr. *Lemery*, it destroys the Acids or Salts that nourish that Distemper. One must take care not to be over-stocked with this *Magistery*, because its Colour will from white become yellowish as it grows old, and so it will become unfit for Sale.

This *Magistery* should be bought of honest Persons, for there are a great many Cheats in it, and there is no body can answer for it but he that made it, and therefore you must not stand upon the Price.

Bismuth is a metallick Matter, but it is hard, brittle, shining within, disposed into smooth Shoots, bright and shining as little Pieces of Glass. This Matter is drawn from the gross and impure Tin that is found in the Mines of *England*. The Workmen mix this Tin with equal Parts of Tartar and Salt-petre. This Mixture they throw by Degrees into Crucibles made red-hot in a large Fire. Afterwards, when the Matter is melted, they pour it into Iron Mortars that are greased, and there let it stand to cool. Then they separate the *Regulus* that is at the Bottom from the *Scoria*, and wash it well. It is the *Tin-glass* that one may properly call the *Regulus* of *Tin*. Some People say, that in the Tin of which they make *Bismuth*, there is always a little Mixture of Arsenick. We can make *Bismuth* in *France*, with ordinary Tin, Salt-petre, and Tartar, as I have said; but it will be brighter than that of *England*, because the Tin we use is purer than that they use in *England*.

This Operation is the same as that of *Regulus* of Antimony; there is the same Detonation and Purification of the gross Sulphur contained in the Metal; the looser Parts of the Sulphur are elevated with the volatile Parts of the Salt-petre, and the Oil of Tartar, by the Detonation; afterwards the fixed Salts of the Salt-petre and the Tartar, which are become Alkalies, dissolve the other Part

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of

of the Sulphur, which renders the Tin hard and brittle, whereas before it was pliant and malleable; for this Sulphur made the Ductility, and the exact Ties between all the Parts of the Metal. It may likewise happen, that some small Portion of the Salts of Tartar and Salt-petre may penetrate this *Regulus* of Tin, and so contribute to the making of it brittle.

Bismuth is brought to us in round or orbicular Lumps, flat below, and round above, and of the same Figure with those of *Regulus* of Antimony, which was cast in a Mortar whilst it was in Fusion.

Tin-glass is to be made choice of in fine large Pieces, shining, whose Shoots are large, white, and sparkling. The Pewterers mix it with their Tin, to render it more beautiful and sounding.

It is resolute and drying, being beat to Powder, and made up either into an Ointment, or a Plaister.

Zinck, which has been mentioned above, is a sort of Marcasite, or a metallick Matter, resembling Bismuth, but less brittle, and in some Measure pliable to the Hammer. It grows in the Mines, and principally in those of *Goslar* in *Saxony*. That is best which is hard, difficult to break, white, with Shoots that are large and shining. It is used to cleanse and whiten the Tin, as they make use of Lead to purify Gold and Silver. The Workmen mix in their Casting about six hundred Pounds of Tin, with one Pound of this Mineral.

Zinck is made use of in Solder: they likewise mix it with Copper to give it the Colour of Gold.

Zinck is resolute and drying, being applied outwardly.

[What our Authors describe as *Bismuth*, is indeed no more than a *Regulus* of Tin: but there is a true genuine mineral *Bismuth*, which is the *Bismuthum sive Plumbum Cincrum*, *Worm.* 129. *Marcasita sive Bismuthum*, *Schrod.* 456. *Bismuthum*, *Wood. Att. Tom. ii. p. 1.* *Plumbum Cincrum*, *Agricul.* It is a metallick Substance, fusible, but not ductile, very brittle and heavy, and distinguishable from Lead and Tin by its Colour, which is sometimes shining like Silver, and sometimes purplish; resembling the *Regulus* of Antimony, but consisting of broader *Laminae*, and staining the Fingers. It is prepared by Artists, being first torrifed, and then melted into a *Regulus*. It is often found in Silver Mines, and indeed wherever it is found, the Miners conclude they shall find Silver. The principal Mines of *Bismuth* are in *Misnia* and *Bohemia*: some pretend that it may be extracted from *Cebal*, melted into a *Regulus*, but this wants Proof.

Bismuth seems to have been unknown both to

the *Greeks* and *Arabians*; for the *Arabian Marcasite* was the *Pyrites*, as has been observed before. It is scarce at all used in Medicine, but a good deal is sold to the Pewterers and Dealers in Hair.

Zinck is the metalline Part of *Lapis Calaminaris*.]

9. Of Enamels.

ENAMELS are Vitrifications made of Tin, Sand, and Pot-ashes of *Allicant*, to which they give divers Colours, with different Metals, as shall be shewn hereafter.

The *Enamels* come from *Venice* and *Holland*, and are in flat Cakes of different Sizes, and different Marks; some have the Name of *Jesus*, some have the Figure of a Sun, and the like, from the different Workmen that made them.

The first is the *White Enamel*, which is the Basis of all the others, and is made of Tin calcined, or Putty, of Sand and Pot-ashes, which having undergone a great Fire, are reduced to a Paste, and being cooled, become hard as a Stone. It is this white Enamel which they use at present for varnishing their Earthen Ware, rather than Tin calcined and exposed to the Air and Weather for a Year together, that Operation being too long. *White Enamel* is used by the Enamellers, Goldsmiths, and others: as for the Choice of it, there are none but they that use it, that can know the Beauty and Goodness of it; the Whiteness is more or less according to the Goodness of the Tin it is made of.

The second *Enamel* is of a Gridelin approaching to a Slate Colour, which is white Enamel coloured with Azure.

The third is of a Sky Colour, which is a white Enamel coloured with Copper, and Cyprus Vitriol.

The fourth is of a Flesh Colour, which is white Enamel coloured with the Perigord Stone.

The fifth is the Yellow, which is the White coloured with Rust of Iron.

The sixth is Green, which is White coloured with Pin Dust, or other Filing of Brass.

The seventh is the Blue, which the Enamellers call the *Faux-lapis*, the false Stone; which is the sky-coloured Enamel, made with *Lapis Lazuli*. These Enamels will also make different Colours, that is, many Colours are made of one, by putting in more or less of the Metals, or Drugs, before-mentioned.

Enamel is called *Encaustum*, from a *Greek* Word signifying *Burning*, because *Lemery*. Enamel is made by a great Fire: but the *Encaustum*, or *Enamel* of the Antients, was quite another Thing from that which we now use, and is supposed to be wholly lost. The making

making Enamels is a Work almost of the same Nature with making artificial Gems, and a Mixture of the same Colours, with this Difference, that in Gems the Mass is transparent, according to the Nature of them, but in this it is opacous and solid, it being Tin, which gives it such a Body and Solidity. The Ancients made their chequered or Mosaick Work of it; and Goldsmiths now use it in colouring and enamelling of Gold.

As for Enamelling, these Things must be generally observed: that the Pots in which the Enamel is made, be glazed with white Glass, and able to endure the Fire: that the Mass and Colours for the Enamel, be well mixed and incorporated: that the Enamel, when well mixed, refined, and of a good Colour, be taken out of the Fire with a Pair of Goldsmith's Tongs: that Care be taken that no Dirt or Ashes fall in or mix with it.

The Way of making Enamel, is this: powder, grind, and searse well the Colours, and mix them well first with one another, and then with the Matter for the Enamel, then set them in Pots in the Furnace; when they are all melted and incorporated, cast them into Water, and when dried, set them into the Furnace again to melt, which they will soon do, and then make Proof; and if the Colour be too high, add more of the Matter for Enamel; if too light, add more of the Colour till it is exact, then take it out of the Furnace.

The common Matter for all Enamels, is thus made: take fine Lead, thirty Pounds; fine Tin, thirty three Pounds; calcine them together in a Furnace and searse them; boil this Calx a little in fair Water in an Earthen Vessel; take it off the Fire, and decant off the Water, which will carry off with it the finer Part of the Calx; put fresh Water to the Remainder, and boil and decant it as before; repeat this as often as the Water carries off any Calx; re-calcine the gross remaining Calx, and then draw off again the more subtile Parts as before: then evaporate these Waters which carried off the Calx at a gentle Fire, that the Calx may not be wasted, which will remain at the Bottom much finer than ordinary. Take of this fine Calx, Crystal Frit made of Tarso, which is a hard and most white Marble, ground and searsed fine, of each six Pounds four Ounces; of pure white Salt of Tartar, one Ounce; searse and mix them well: Put this Mixture into a new Earthen Pot, giving it a Fire for ten Hours; then powder it, and keep it in a clean dry Place: of this Mixture all Enamels whatsoever are made.

Although these Enamels are not made use of in Medicine, yet they have their Virtues according to the Qualities of the several Drugs they are composed of; but they must be very well ground upon

a Marble, if you would have them produce any Effect.

The white, the blue, and the yellow Enamel, are purely Desiccatives, but the others are Deterfives and Desiccatives.

To this Account might be added the Manner of preparing the *Encaustum caeruleum*, and *Zaffer*, both much used by the Potters, Glassmen, and Enamellers; which are Preparations of *Cobalt*, to be treated of hereafter, and many others: But as they are of no use in Medicine, I judge it would be improper to give a long Account of them in this Place.

10. Of Copper.

COPPER is a Metal composed of a little Salt and Mercury, and abounding in Sulphur and Vitriol: it is also called *Venus*, from the Influences it is supposed to receive from that Planet: it is found in several Parts of *Europe*, but principally in *Sweden* and *Denmark*, from whence we have almost all that we sell. *Copper* is taken out of the Mine in Sand and Stone, almost like Iron; and after it is washed and purified from the Earth mixt with it, it is cast into Moulds of different Figures: To render it true *Rose Copper*, they melt it the second Time, and when it is well refined, they cast it into Moulds of Sand, where it falls into Cakes that are not smooth, but as we see them. When they would make this *Copper* malleable, they melt it a third Time, and afterwards form it into Cakes of three Inches thick, and about fifteen Inches Diameter. Of these Cakes, put whole or in Quarters into the Fire, they make Plates, and of these Plates they make Cauldrons, by the Means of Hammers that work by a Water-mill, and the Plates are formed into the Vessels by one that turns these Plates, with his Legs covered with Sheeps Skins, whereby he reduces them into what Shapes he pleases, with very little Use of his Hands.

Copper is a Metal very hard and dry before it is melted; and when it has been often melted, it becomes ductile, and almost as malleable as Gold or Silver. From *Copper* the Chymists draw several Things very proper for divers Uses, as shall be shewn hereafter.

Æs, *sive Cuprum*, *sive Venus*, that is, *Copper*, is a beautiful Metal, shining, of a reddish Colour, easy to rust, abounding in Vitriol. It is found in several Places of *Europe*, but principally in *Sweden* and *Denmark*; it is taken from the Mine in Lumps, which are superficially washed to cleanse it from the Earth that is mixed with it, and afterwards melted with

vehement Fires. 'Tis to be observed, this Metal is very difficult to be melted: they purify it from its *Scoria*, and cast it into Moulds. When the same Copper has been twice or thrice melted, it becomes more pure and ductile, and you have a red Copper more beautiful than the common.

Copper is a Metal of good Use in Physick, and is said to strengthen the generative Parts in Men and Women; but used crude in the Stomach in Filings, or the like, it is little better than Poison, being hot to the last Degree, and of a caustick Nature, causing Pain in the Stomach and Belly, Vomiting, Fluxes, Ulcers, and Difficulty of Breathing; and if it be calcined, it is yet worse. The Cure, if any one be hurt with it, is by warm Water mixed with Oil, Oil alone and Butter, Hogs Lard melted and drank; and if it be got into the Guts, by Clysters of the like Kind, Salt and Oil of Tartar, and other Alcalies; Juice of Mints, and such other Remedies as are used against Arsenick.

Thin Plates of *Copper* infused all Night in Lime-water only, or in Lime-water mixed with volatile Salt, or Spirit of *Sal Armoniack*, make an admirable *Collyrium* for the Eyes to wash with against Mists, Clouds, Films, Pearls, Suffusions, &c.

Copper is made or generated of a purple Sulphur, a red Salt, and a Citrine Mercury.

[*Copper* is a Metal softer than Iron, sonorous, shining when polished, fusible, and ductile to a great Degree. It is found in the Mines sometimes pure, in form of small Rods, Branches, Globules, or Masses of different Figures, but commonly is contained in a particular Ore. This, in some, is of a shining Gold Colour, which arises from its Sulphur, and does not shew it to be at all the richer; in others it is yellow, Violet coloured, purplish, bluish, or blackish, mixed with gold coloured Sparkles, and green Streaks. *Copper* is seldom found alone, but generally accompanied with some other Metal, as Silver, Iron, or Lead, and with a large Quantity of a combustible Sulphur, hard to be separated from it. These different Ores, are differently managed by the Workmen, according to the different Substances they contain: those which contain the greatest Quantities of Sulphur, must sometimes undergo nine or ten Torrefactions before it can be exhaled; and if Silver is contained in it, they separate it by means of Lead.

There are some Springs of *Copper* Waters, from which Vitriol may be made by Evaporation, and *Copper* may be precipitated from them by means of Iron, which has made some believe they turned Iron into Copper. The most famous of

these Springs is that in the *Carpathian* Mountains, which will turn a Horseshoe of Iron into the Appearance of a Copper one in a very little Time, even corroding the Iron, and substituting, in some Degree, *Copper* in its Place. The specifick Gravity of *Copper* is to Gold as four to nine nearly: when exposed to Moisture, it contracts a green Rust: it is soluble in Water, and to be corroded by all Oils and Salts, its Solution by Acid or fixed alkali Salts is green; by urinous blue: The Filings thrown into the Flame of a Candle burn and emit a greenish Flame, but do not sparkle. *Copper* long calcined, turns to reddish Ashes, which, placed on a Tile before a Burning-glass, turn to an intensely red Glass almost opaque; and this Glass laid on a Piece of Charcoal, before the same Glass, revives into *Copper*. Hence it is evident, that *Copper* consists of a large Quantity of a combustible Sulphur, and a red vitrifiable Earth, which shewed itself pure in the Fire when the Sulphur was all exhaled. It is little used in Medicine, for its Salts are truly poisonous.]

II. Of Yellow Copper, or Brass.

YELLOW Copper, is old or broken *Copper* melted and made yellow by means of the true *Calaminaris* Stone. The greatest Quantity of Brass or yellow Copper, is made in *Germany* and *Flanders*. They beat this Brass, and reduce it to the Thinness of Paper; and this is what we call *Tinsel*. They afterwards beat this *Tinsel* over again, and make it extremely thin, and afterwards put it into little Books of Paper, and call it *German Gold*. They grind this *German Gold* to Powder, to make a Bronze Powder for the Casters of Statues in Plaister, &c. which has more or less Colour, according to the several Times that it has passed the Fire. They also grind this Brass over and over again, 'till it becomes an impalpable Powder, which they sell under the Name of *German Gold* in Powder. Others put this Powder Gold into Muscle Shells, and call it Shell Gold. That Shell Gold is most esteemed that comes from *Augsburg* in *Germany*, and has the Name of *Augusta*. As to the Choice of the *German Gold*, either in the Leaf, the Powder, or the Shell, that which is finest, and highest in Colour, is esteemed the best. The *German Gold* is used by Painters, especially such as paint in Miniature. The Painters Bronze is likewise used by them; and also to make Figures of Plaister have a Brass or Copper Colour, and for other Uses.

Besides the different Preparations that are made of this yellow Copper, the *Venetians*, as I am assured, make of it that which the *French* call *Purpurine*,

purine, which heretofore was made use of upon Coaches. By means of this yellow Copper, and the Help of Fire, they make that Sort of Vitri-fication, which the Enamellers call *Avanturine*; and they say the Name was given it because this Operation was found by Accident, and without being thought of, by some Dust of yellow Copper which fell into a Furnace where Glass was melting. *Avanturine* is all embellished with Spangles of gold Colour. There is also an *Avanturine* that is found naturally in several Places of France.

Aurichalcum, yellow Copper, or *Leton*, *Lemery*. is a Mixture of Copper and *Calaminaris* Stone melted together by a very vehement Fire in Furnaces made on Purpose. The Discovery was made by the Alchymists, who endeavouring to turn Copper into Gold, found how to give it a yellow Colour. The greatest Part comes from *Flanders* and *Germany*. The *Calaminaris* Stone embarrasses and extends the acrid Salts of the Metal to that Degree, that Brass does not make the same Impression on Liquors, as the red Copper. Besides, as the *Calaminaris* Stone costs but little, so the yellow Copper is cheaper than the natural.

That which we call Tinsel, is yellow Copper beat to a Leaf as thin as Paper, and is used by the Lacemen.

German Gold is Tinsel beat very thin, and kept in little Paper Books for the Use of Painters.

The Painters Brass is the *German Gold* ground to Powder, which is put into little Shells, and called Shell Gold. It is used to colour Figures made in Plaister, and by them who paint in Miniature.

The common Brass, which the Workmen call Metal, is an Alloy of Copper with *Leton*, or with Tin. They make divers Sorts, which only differ according to the Quantity of Tin which is mixed with the Copper; the Mixture is from twelve Pounds to five and twenty Pounds, to the hundred Weight of Copper.

They use Brass for Clocks, Mortars, and several other Works. The best is that which gives the clearest Sound when you strike it.

[Brass is the *Orichalcum*, *Charlt. Foss.* 47. *Ald. Mus. Met.* 126. *Æs flavum*, *Worm.* 122. It is made by melting the Copper and *Lapis Calaminaris* together, which at first send forth a red Flame, afterwards a blue one, and finally a yellow, which is the Sign by which they know it is perfectly made; when it is cold, it is found to have gained about one third in Weight from the Quantity of the *Lapis Calaminaris* the Copper has taken up, and yet remains as ductile as before, for

it may be drawn out into very fine Wire, or beat into very thin Leaves.]

12. Of Pompholyx, or Flowers of Brass.

THE *Pompholyx*, called *White Calamine*, *Nil*, *Nihil*, *Nibili Album*, or Flowers of Brass, and improperly, Bronze Ashes, is that which sticks to the Cover of the Crucible, and the Pincers of the Founders, when they melt Brass; and it is certain that nothing but Brass gives the true *Pompholyx*, and not the cast Copper, nor the Metal, nor Bronze, as the greatest Part of the Authors have written.

Although this *Pompholyx* be easy to be come at, yet there are not many Drugs more unknown; which proceeds from the Negligence or Ignorance of the Apothecaries, because they take Tutty and the *Pompholyx* to be the same Thing, and therefore they use the Tutty instead of it.

The best *Pompholyx* comes from *Holland*, not that it is in Reality better in Substance than any other, but better collected and preserved. That *Pompholyx* ought to be chosen which is very white, light, friable, clean; it matters not whether *French* or *Dutch*, so it be very white.

They who cast Bells may gather a little of it; but because it is but in very small Quantity, it is not worth while to look after it. Its principal Use is externally in Ointments, particularly that which bears its Name, and of which it is the Basis.

The *Pompholyx*, called in *Latin*, *Nil*, *Nibili Album*, *Capnites*, *Bulla Cadmica*, *Lemery*, *Calamites*, is a Flower of Brass, white and light, which is found sticking to the Cover of the Crucible in which they melt Copper with the *Lapis Calaminaris* to make Brass or Leton. It is found likewise sticking upon the Founders Tongs: But either through Negligence in collecting this Drug, or because the Workmen let it fall in the Fire when they uncover the Crucibles, we rarely find it amongst the Druggists, and are therefore obliged to substitute Tutty in the Room of it.

The *Pompholyx* should be light, very white, and crumbling. It is deterfive, deliccative, proper for Wounds. It is not much used, but externally for Ointments. Some give from half a Scruple to two Scruples in Intermitting Fevers. It excites Vomiting very violently.

[*Pompholyx* is the *Nil Album*, *sive Pompholyx*, *Wood. Att. Tem.* ii. p. 50. *Pompholyx*, *Worm.* *Mus.* 135. *Kentm.* 72. *Charlt. Foss.* 55. *Ald. Mus. Met.* 16. It is a fine white Flower, or Soot, which sticks to the Arch of the Furnaces and Covers of the Crucibles in which Calamine and Copper.

Copper are melted together for the making of Brass; it has the same Virtues with Tutty, to be described hereafter, which is generally used in its Place. This is the History of the *Pompholyx* we use; but it is to be observed, that this is not the *Pompholyx* of the Antients, which is now wholly unknown in the Shops, and of which *Dioscorides* mentions two Kinds, one of a Kind of Copper Colour, and moist or fatty; the other very white and smooth: The Origin of the first of these is uncertain, but the last, he says, was made by the Coppersmiths, who, in endeavouring to meliorate that Metal, threw it into large Quantities of powdered *Cadmia*; the fine Dust that arose from this Mixture, concreted into *Pompholyx*. They likewise made it by burning *Cadmia* alone in Furnaces for having thrown it in small Pieces into the Fire, near the Nozel of the Bellows, they blew the most fine and subtile Parts against the Roof of the Furnace: This was the *Pompholyx*, and what was reflected back from thence, was the *Spodium* of the Antients, which was heavier, and of a blacker Colour. Both these Substances might still be had, if their Virtues made them worth the Trouble of preparing: But the Tutty is generally esteemed to have all their Qualities, and is, as before observed, constantly used in their Place.]

13. Of the *Æs Ustum*.

Pomet. THE *Æs Ustum*, or burnt Copper, is made of red Copper cut into little Plates, and put into a Crucible with Sulphur, and a little common Salt, *Stratum super Stratum*, and put into a great Charcoal Fire; when the Sulphur is burnt away, and the Copper taken out, it is of an Iron Colour without, and reddish within, being shining and very brittle.

The *Æs Ustum*, if it be in a good Condition, should be moderately thick, and of the Colour beforementioned; and being rubbed one upon another should make a Red like that of Cinnabar, which the *Æs Ustum*, or burnt Copper cannot do, unless some Salt be put to it, which is the Secret of the *Hollanders*, whereby they make it better than that of *France*.

The *Æs Ustum* is of some small Use in Physick, because it is deterfive; but they who make Use of it, first make it red-hot in the Fire nine Times, and quench it as often in Lintseed Oil, and then reducing it to Power, use it for eating off dead Flesh; and they call this Powder of the *Æs Ustum*, so prepared, *Crocus*, or Saffron of Copper.

[This has formerly been much in Use among Chirurgeons, but the Tedioufness of the Preparation, as there is no making it without long and

violent Calcination in a Reverberatory Furnace, has made it now little used, and but seldom seen in the Shops: it is drying and astringent, with some Degree of Acrimony.]

14. Of Verdigrise.

THE natural *Verdigrise* is a greenish Marcasite like the Dross of Iron; it is found in Copper Mines, but is of no Use that I know of.

The common *Verdigrise*, or Rust of Copper, is made of Plates of red Copper, and the Skins of Grapes, after pressing, soaked in good Wine, put together in a large earthen Pot, *Stratum super Stratum*, that is to say, they put an Handful of those Skins at the Bottom of the Pot, and then a Layer of Copper, then another of Skins, and on that another of Copper, and so on till the Pot be full; then they put it in a Cellar, and after some Days Time they take out these Copper Plates, which are covered with a green Rust, by the *Latins* called *Ærugo Æris*, and this Rust being scraped off, the Plates are put in again after the same Manner as before; and this must be repeated till the Copper is consumed, or rendered so thin, that it may be mixed with the *Verdigrise*, as it often happens. The most Part of the Authors who have treated of *Verdigrise*, tell us, that it is made with Vinegar, which is not true, for the best Wine is not too good for it; and this is so true, that there is scarce any but *Languedoc* Wine that will make good *Verdigrise*. It is in and about *Montpellier* that the greatest Part of the *Verdigrise* used in *France* and other Countries is made, and it is a Commodity very difficult to make, and to hit right, although it seems as if nothing were more easy; for if never so little happens to be amiss, it grows greasy and black, and good for nothing, and will never come to a true Consistency. Had not the Receipt been stolen from me, I would have told you how they do it at *Montpellier*, which I hope to recover and present the Reader with, in the second Edition.

There are some Authors, who say, that one may make *Verdigrise* by putting Plates of Copper in a Crucible, with Salt, Sulphur, and Tartar, which being calcined and cooled, the Plates are converted into a very good *Verdigrise*; but these Operations, supposing them to be true, are at present of no Use, because all the *Verdigrise* we sell, is made in the forementioned Manner.

We have two Sorts of *Verdigrise* from *Montpellier*, the one in Powder, the other in Cake: To be good, it must be dry, of a beautiful deep Green, and with the fewest Spots possible. *Verdigrise* is a Merchandize that loses extremely in keeping,

keeping: those who deal in it, mix it with several Drugs, that there is no Necessity of naming, and render it so moist that the Merchant loses much by the Waste of it, besides what he also loses by the Skin which covers it, for which he pays as much as if it were *Verdigrise*: Therefore they who use it should consider its Goodness, and not stand upon the Price; for I can affirm, that there is no Cake of *Verdigrise*, such as they send from *Montpellier*, that weighs twenty-five Pounds, but after it is dry has lost a third Part; so that the *Verdigrise* that cost twenty Pence when soft, will be worth near eight and twenty Pence when thoroughly dry.

Verdigrise is a Drug very much demanded, and the Quantity of it that is used is almost incredible, not only in Physick, but by Dyers, Skinners, Hatters, Farriers, and Painters; but it is remarkable, that *Verdigrise* alone, ground with Oil, cannot be used as a Green in Painting, but it is absolutely necessary to add white Lead to it, for otherwise, instead of being green, it would be black. As for the Properties of *Verdigrise*, the Principal of them is eating off dead Flesh. The Apothecaries use it in some Ointments and Plaisters, as the *Ægyptiac*, the *Apostolorum*, the Divine Plaister, and others. They who colour Paper green, make use of *Verdigrise* and white Tartar to give it that Colour.

The Apothecaries and others, who have Occasion for *Verdigrise* in the aforementioned Compositions, and others, instead of the Powder, may dissolve it in Vinegar, and strain through a fine Sieve, and so avoid, in reducing it to Powder, the Effects of the ill Quality of the flying Dust of *Verdigrise*.

Verdigrise, in Latin *Ærugo*, or *Pilemery*. *ride Æris*, is a Rust of Copper penetrated and rarefied by the acid tartarous Salt of Wine. To make it, they stratify Plates of Copper with the Grape Skins when the Must is taken from them, and leave them in that Maceration till they are in part converted into a bluish green Dust, which they separate with Knives, and continue the Operation as before, till the whole be turned into *Verdigrise*. This is commonly the Work of the Women in *Languedoc*, *Provence*, and *Italy*, where the Refuse of the Grapes have the greater Force to penetrate the Copper, and work upon it with their Salt.

It deterges powerfully, it consumes proud Flesh, it attenuates and resolves, and is used only in external Medicines; it is sharp and digesting, and cicatrises Ulcers, being mixed with Oil and Wax, and applied. It likewise cleanses them from their Filth and Putrefaction, although they were the

most stubborn, and had resisted all other Remedies.

It is of good Use in the Gout, being dissolved in fair Water, and used warm to the Part.

It cures Diseases of the Eyes, and effectually takes off Pearls and Films. But before you use it for the Eyes, or for Wounds or Ulcers, you must purify it after this Manner: Powder it, and put upon it Spirit of Vinegar six or seven Times its Weight; digest till the Vinegar is tinged very green, which decant, and cast away the Fæces; then evaporate the Vinegar in a Brass Vessel, and so you will have a glorious *Verdigrise* at Bottom, of which one Ounce is worth ten Ounces of the former.

Take of this fine *Verdigrise* a Drachm; Spirit of *Sal Armoniack*, half an Ounce; Spirit of Wine camphorated, two Ounces; mix them for a *Collyrium* to wash the Eyes. Take the White of an Egg beaten well with Spring Water, four Ounces, and add to it *Saccharum Saturni*, ten Grains; white Vitriol, six Grains; and so many Drops of the *Collyrium* as may make it of an Azure Colour, with this wash the Eyes two, three, or four Times a Day.

This fine prepared *Verdigrise* being made into an Ointment with Honey, Juices of Wound Herbs, Vinegar, and absterfive Sulphur of Vitriol, is applicable to weeping Wounds, Ulcers in the Joints, &c.

[The Manner of making *Verdigrise* is this: The Husks, Stones, &c. of Grapes being first dried, and after dipped in strong Wine, are laid in wooden or earthen Vessels for nine or ten Days, till they begin to ferment; then being squeezed together with both Hands, they are formed into Balls, which are put into proper earthen Pots, and have Wine poured over them, till about half is covered; the Vessels have a Straw Lid thrown over them, and are set in a Wine Cellar, where the Balls are left in Maceration for twelve or fifteen Hours, being turned every four Hours, that the Wine may penetrate every Part of them; afterwards the Balls, being raised a Finger's Breadth above the Surface of the Wine, and set upon wooden Bars, the Vessels are shut again, and left in that State for ten or twelve Days more. After which Time the Balls emit a strong and penetrating Scent, and are then fit for dissolving Copper. For this Purpose they are broke and bruised with the Hand, and the outer Part, which is driest, is mixed exactly with the inner, which is still moist with Wine. Then they are stratified with Copper Plates in the same Vessels upon wooden Bars; the Plates making always the lowest *Stratum*, and the Balls the uppermost. The Plates are four Inches long, and

and three broad; and if the Copper be new, they must be previously buried for four and twenty Hours in *Verdigrise*, and then heated a little in the Fire. The Vessels being filled in this Manner, and shut close, are left without any farther Management till the *Verdigrise* is made, which happens sooner or later, according to the Nature of the Copper; some yielding its Rust in six Days, and some requiring fifteen or sixteen Days. The *Verdigrise* being compleatly extracted, the Plates covered with it, are taken out of the Vessels, and their Edges being moistened with the strongest Wine, they are wrapped up in Linen Cloths dipped in the same, and laid in a Wine Cellar for three Weeks, and then it is scraped off the Plates, and kept for Use.

This is the Method used at *Montpellier*, which I have been the more particular in relating, because our Author says he intended to have given it, but that the Receipt was stolen from him.]

15. Of *Verdigrise crystallized*.

Pomet. THE crystallized *Verdigrise*, or Crystals of *Verdigrise*; or, as it is called by Merchants and Painters, Calcined or Distilled *Verdigrise*, is *Verdigrise* dissolved in distilled Vinegar, and afterwards filtered, evaporated, and crystallized in a Cellar. These Crystals are of some small Use in Physick, to consume dead Flesh. They are likewise used by Painters to make a green Colour, especially for Miniature.

All the Crystals of *Verdigrise* that we sell in *Paris*, come from *Holland* or *Lyons*, and are not unlike Sugar-candy, except in Colour, especially to that which is on Sticks: if good, these Crystals must be beautiful, clean, and transparent, very dry, and as free from Sticks as possible. Here it may be observed, that the Verdet which the Apothecaries make, is reduced to Crystals by the Means of a Cellar, whereas that which comes to us from the Places beforementioned, is made after the Manner of Sugar-candy, as I have been informed.

I cannot tell what has induced the Merchants to call these Crystals Distilled or Calcined *Verdigrise*, seeing it is neither distilled nor calcined, but made after the forementioned Manner.

They likewise make Crystals of *Verdigrise* by dissolving Copper granulated in Spirit of Nitre, and afterwards evaporating to a Scum or Pellicle, and setting it in a Cellar to crystallize.

If you would reduce these Crystals to a Liquor after having dried them, you must carry them back to the Cellar to resolve them into Water; and this

Liquor is called by the Apothecaries or Chymists, the Liquor of Copper or *Venus*, and the Crystals the Vitriol of *Venice* or Copper.

[These Crystals dissolved, make an admirable Liquor to deterge and dry Ulcers, and eat away fungous and callous Flesh; and are a good Ingredient, in small Quantities, in Eye-Waters for clearing the Eyes from Specks and Films.]

16. Of the Mountain *Verdigrise*, and Flowers of Brass.

THE Mountain or *Hungarian Verdi- Pomet.* *grise*, is a Sort of greenish Powder in Grains, like Sand, which is found in the Mountains of *Kernaufen* in *Hungary*. It is found likewise in the Mountains of *Moravia*. What the Antients call Flowers of Brass, is made by throwing Water, or rather Wine, upon Rose Copper, whilst red, that is to say, as it comes out of the Furnace; and this Flower is gathered and found sticking to other Plates of cold Copper, which they place over them, in small Grains like Sand, and this is made by Vapours which arise when they throw Water or Wine upon the hot Copper; and it is that which makes what we call Rose Copper to be so unsmooth, and to be full of little Figures. Others have assured me, that the Mountain *Verdigrise* was Plates of Copper dissolved in Wine, and made almost after the same Manner as *Verdigrise*; but as I know no more of it, I shall only say, that such is to be made choice of as is dry, of a high Colour, well granulated, that is to say, like Sand, which is the Mark of natural Mountain *Verdigrise*, and makes the Difference between that and the Artificial, which some make by pulverizing *Verdigrise*, and putting a little white Lead amongst it.

The *Verdigrise* of the Mountain is of no other Use but in Painting, principally for making a Grass Green.

As it is a dear Commodity, and comes from several Parts, so there are different Sorts of it, and different Prices; therefore they who use it, should regard the Qualities of it, rather than the Cheapness.

[The first of these is the *Viride Montanum Hungaricum*, *Wood. Att. 2. a. 52.* It is not used in Medicine, but sometimes by the Painters.

The *Flos Aris*, *Worm. 132. Ch. Foss. 54.* is a small granulated reddish Substance, got by pouring cold Water on melted Brass, and receiving its Vapour on an Iron Plate. It is commended as an Ophthalmick and Detergent, but is now never used nor kept by the Druggists.]

17. Of Bronze and Bell-Metal.

THIS Bronze Metal, according to Monsieur *Puretiere*, is a Composition of Metals, the Principal of which is Copper melted with some Part of Tin, or of Brass; some, for Cheapness, put in Lead. There is likewise another Compound of Copper, which is called *mixed Metal*, or *Bell-Metal*; they give one or the other of these Names according to the greater or lesser Quantity of Tin that is mixed in it, which is from twelve to five and twenty in the hundred. The Dregs of mixed Metal are called *Diphryges*, and are used in Physick. The Scales of Brass is what falls from the Brass when they hammer it and work it.

Diphryges is of a mixed Faculty, meanly astringent, sharp, and of excellent Use against spreading Ulcers. It cleanses, dries, and consumes Excrescences, and being made into a *Collyrium*, is good for dropping Eyes, and such like Diseases of the same. The best is that which has the Taste of Brass, or the Rust of it, being astringent, and very much drying the Tongue.

As for the Metal itself, we use it for making Figures, Bells, Mortars, and other Utensils. The best of it is that which is whitest, and sounds like Silver. I should not have been so long upon this Head, if it had not been for the sake of Tutty, which is procured from it, and is described under the following Head.

[The *Diphryges*, *Charl. Foss.* 55. *Aldr. Mus. Met.* 14. *Worm. Mus.* 133. is a Recrement of Brass, which subsides on wetting it while in Fusion; it is acrid and astringent, and therefore excellent in stubborn Ulcers, but at present it is unknown in the Shops.

The Scales, or *Squamæ Aeris* of the Shops, are little different from the *Æs Ustum*, being only the Particles of burnt Copper, which fly off while it is hammered: mixed with Sulphur and *Florentine Orrice* they cure stinking Feet, being worn in the Shoes; but this may be attended with very ill Consequences, for the sudden Checking the Sweat, which occasions that Stinking, may bring on Diseases of a much worse Kind.]

18. Of Tutty.

TUTTY of Alexandria, or the *Spodium* of the Greeks, is a metallick Substance in Scales or Gutters, of different Size and Thickness, smooth within, and rough without, with a Sort of Excrescences, like Pins Heads; for which Reason the Antients called it *Spodium*, or *Tutty* in the Cluster. The Tutty which we sell in France comes from

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Germany, and other Places, where they make mixed, or Bell-Metal. It is wrong to think, what most Authors, both new and old, have asserted, that Tutty is got from the yellow Copper or Brass, and that it is made at the same Time as the *Pompholyx*; for this is not true, seeing the Tutty is found sticking to Rolls of Earth, which are hung up, and placed on purpose on the Top of the Furnaces where the Founders cast their mixed and Bell-Metal, to retain the Fume or Vapour, which is like the Smoke in Chimneys; and by the Means of these Rolls, the Vapour is retained and reduced into a Shell of the same Figure as the Roll: And the Thing is so certain, that if one will but look amongst the Tutty, one may frequently find the Earth sticking to it, therefore it is not made by sticking to the Bottom or Sides of the Furnace. And that which confirms this is, that all the Tutty we have is in Form of a Gutter, and roundish.

Tutty ought to be in bright Scales, thick, granulated, of a fine Mouse Colour without, and a pale Yellow within, hard to break, and as little mixed with Foulness as possibly can be. Tutty has no other Use, that I know of, but in Medicine, and that not till it is well beaten. Others burn it, and after wash it, and make it up into little Balls, which they use for Diseases of the Eyes, mixing it with fresh Butter, or diluting it with Rose or Plantain Water. Tutty, well prepared, and incorporated with fresh Butter, is an excellent and sure Remedy for the Piles. That is most esteemed which comes from *Orleance*, either because it is better prepared, or because it has all along carried the Vogue with it.

Tutty is brought from *Sweden*, *Cyprus*, *Greece*, *Turkey*, and *Ægypt*; but the *Cyprian* is the best. It was heretofore brought from *Alexandria*, and therefore Authors, in their Descriptions, call it Tutty of Alexandria. The Difference between the *Pompholyx* and the Tutty, or the grey *Spodium*, is this; the *Pompholyx* is more white and light, like volatile Meal; the latter is nearer the Colour of Brass, heavier, thicker, and fattish, which with Vinegar yields a Smell like Brass. Tutty, by some, is accounted the better Medicine, and more powerful for the Uses intended. *Cadmia*, calcined by a violent Fire, and brought to Ashes, is sold for Tutty; but this is a Cheat: Burnt Ivory is also sold in the Shops under the Name of *Spodium*.

It is deterfive, desiccative, proper for Diseases of the Eyes, for drying and cicatrising of Wounds, and for the Piles. It is only used externally, after being ground to a very fine Powder.

[Tutty is the *Lapis Tutia*, *Wood. Att.* T. ii. P. 1. p. 50. *Cadmia Botrytis*, *Ald. Mus. Met.* 16.

Q

Cadmia

Cadmia Capnitis, *Kentm.* 53. There have been a Multitude of various Opinions about this Drug; *Garzias* thought it the Ashes of a Tree; *Bontius*, a glutinous Earth; and *Douglafs*, a glutinous clayey Earth of the *East-Indies* dried in Furnaces. Our Author has given a much jufter Account of it than any of these; but it is to be observed, that the *Cadmia* of the Antients was different from that of the Moderns. It was the Recrement of the Copper Oar, blown off by Belloys while it was melting and sticking to the Sides of the Furnace of different Figures and Colours, and from thence distinguished into different Species. The finest Kind they esteemed that which stuck to the very Edges of the Furnace, and was as light as Wood-ashes. The next was that which hung down from the Arch of the Furnace, called *Borevōdne*, from its resembling Clusters of a middle Weight between the foregoing and the following, and of two Colours, whitish and purplish, the last of which was most valued: The third Kind was what being too heavy to ascend to the Top of the Furnace stuck to the Sides; from this two other Kinds were obtained, a bluish and a red. These were used to destroy Cicatrices, and the former for Diseases of the Eyes. The best *Cadmia* was found in the Furnaces of *Cyprus*. The Silver Furnaces were also observed to afford a *Cadmia*, but it was lighter, whiter, and much inferior to the Copper kind; and according to *Galen*, there was a kind of *Cadmia* made from a Species of *Pyrites*. But all these Kinds are now unknown in the Shops. And even the *Arabians* were so little careful about them, that they gave the same Names to other Substances; whence a great deal of Confusion has risen since, especially as some of the later *Arabians* have endeavoured to apply to these other Substances what the Antients said of the different Species of their true *Cadmia*; particularly *Avicenna* says of Litharge of Silver, all that *Dioscorides* has said of *Cadmia*.

The present *Cadmia Fernacum*, or *Tutty* of the Shops, is a Recrement of *Calaminaris* melted with Copper, and not of Copper alone, as was that of the Antients: It is, properly speaking, a Sublimation of *Lapis Calaminaris*, from the melting Copper to the upper Part of the Furnace, where it concretes round Iron Rods, placed there into a solid Crust, which is afterwards beat off into Pieces, like the Bark of Trees: And this was, in all Probability, also the *Tutty* of the *Arabians*; for *Scrapien* describes a Kind of *Tutty*, produced in the Furnaces where Copper was turned into a yellow Metal.

Tutty is reckoned among the principal Ophthalmick Remedies, it deterges and dries without

Acrimony, and is used with great Success in Ulcers of the *Cornea tunica adnata*, and Eye-lids; and also in Itchings of the Eyes and inveterate Ophthalmias.

Spodium or Putty is not this, but a different Substance, mentioned in the Chapter of *Pompholyx*, but very seldom seen in the Shops.]

19. Of Chalcitis.

CHALCITIS, or native *Colcothar*, is *Pomet.* a natural Vitriol made red by subterraneous Fires in the Entrails of the Earth, which is the Reason why *Chalcitis* is found in a Stone of a reddish Colour. I shall not endeavour to write what the Antients have said touching the different Changes that happen to the *Chalcitis*, nor to explain what is *Misy*, what *Melanteria*, and what *Sory*, for I cannot tell what these three last are, or where they may be found. *Matthiolus* upon *Dioscorides*, p. 729. says, that *Misy* is hard, and like Gold, and glisters like a Star, and is found in *Cyprus*. That *Melanteria* is found of two Sorts; one growing like Salt at the Entrance of Copper Mines; the other congealed at the Top of the Mines. He says, that the best *Melanteria* is that which is smooth, clean, firm, and of the Colour of Sulphur, and that turns black as soon as a Drop of Water is put upon it. As for *Sory*, he says it is black, full of Holes, and astringent to the Taste, of a very ill Smell, and that a great deal is found in *Ægypt*, *Libya*, *Spain*, and *Cyprus*. *Pliny*, on the other hand, says, that *Chalcitis*, *Misy*, *Melanteria*, and *Sory*, are the same Thing; that the one changes to the other in Process of Time, that is to say, *Chalcitis* becomes *Misy*, *Misy* turns to *Melanteria*, and *Melanteria* to *Sory*; which I could never find, though I have had a Lump of it above eighteen Years, in which I could never see any Alteration, as to its Nature or Colour, though I have been careful to observe it. It is true, there is some *Chalcitis* that has different Colours in the same Piece; but as I have found no Alteration in it by keeping all the Time I had it, I am apt to believe it was so naturally.

Chalcitis is to be chosen in pretty large Pieces, of a brownish Red, of the Taste of Vitriol, which being put into a little Water, dissolves easily, and being broke, is of a Copper Colour, but something shining.

The *Chalcitis*, or natural *Colcothar*, is brought from different Places, as from *Sweden* and *Germany*. It is a Drug very little used in Medicine, because very rare; and if it were not an Ingredient in *Venice-Treacle*, there would be scarce any Demand for it. The Dearness and Scarcity of this

this Stone has given Occasion to many Counterfeits, and to seek for *Succedaneums*, as the *Colcothar*, or Vitriol made red, the white Vitriol calcined, the *Lapis Calaminaris*, because of its Colour, and several other Things; so that Persons who want the true *Chalcitis*, must apply to honest People, and not stick at a Price.

The *Chalcitis* of *St. Christophers* is very different from this, it is greenish, like Vitriol half calcined, but it begins to be sold for the true.

Chalcitis is a Vitriol naturally calcined *Lemery*. by the subterranean Fires, and rendered into Pieces of Stone, pretty big, red, and sometimes streaked within with yellow Veins something sparkling. It is found in Copper Mines, and within side participates of that Metal. It is melted by Fire. It is brought sometimes from *Germany* and *Sweden*, but is generally very scarce in *France*.

That is most preferable, that is in pretty large Pieces, of a browish red without, which being broke, is of a Copper Colour, something shining, of the Taste of Vitriol, and easily dissolved in Water.

The *Chalcitis* is hot, dry, deterfive, and very astringent. It stops Bleeding at the Nose. It is used internally and externally; and in the Composition of *Venice-Treacle*; but not being easily got, they commonly substitute an artificial *Colcothar*, which is a green Vitriol calcined to a Redness, in the Room of it. It is of thinner Parts than *Sory*, but thicker than *Misy*. In a *Collyrium* it cleanses, dries, and heals the Eyes. The same *Collyrium*, if weakened with Rose-water, prevails against *St. Anthony's Fire*, and all Sorts of creeping Sores, whether of Skin or Flesh. With Juice of Leeks it is said to stop a Flux of Blood at the Nostrils, as also in Wounds, and of the hemorrhoidal Veins. It is good against Vices in the Gums, and eating Ulcers of the Tonsils, the Powder of it being laid upon the Part affected. Burnt, and mixed with Honey, it helps callous and rough Eyebrows, Fistulas, Leprosy, and other cutaneous Diseases.

They who distinguish *Misy* from *Chalcitis*, say, it is a natural mineral Excrement almost like Gold, which glisters when it is broken. It is commonly bred upon the *Chalcitis*, and is only the Recrement of that Mineral, being bred thereon, as Verdigrise is upon Brass. It is very astringent, burning, and of much thinner Parts than *Chalcitis*, but is of the same Virtue with it, as being bred from it, but in a different Degree. That which comes from *Ægypt* is accounted the best, and is more corrosive than *Chalcitis* or *Sory*; being calcined and burnt, or washed, it is good against ma-

lignant Ulcers or Fistulas. With Lime-water, in which a little *Sal Armoniack* is dissolved, a *Collyrium* may be made by infusing the Powder. That Water is likewise good to wash malignant Sores, and running Ulcers.

The *Melanteria* of *Dioscorides*, according to *Matthiolum*, is a mineral vitriolick Matter, of which there are two Kinds. One is found like a Salt upon the Entrance of Copper Mines, from whence they gather it. The second is found at the Top of the same Mine, in a firm, smooth, clean Stone, of the Colour of Sulphur. *Dioscorides* prefers this latter Sort to the first, and chiefly when it grows black upon being melted with a little Water. He says the *Melanteria* is found in *Cilicia*, and several other Countries: He attributes a caustick Virtue to it. This Drug is unknown to us; and many believe, with *Pliny*, that it is nothing else but the *Chalcitis*, which has taken several Shapes and Colours in the Mine. However it is, we substitute the natural *Chalcitis* in the stead of it.

Sory is a stony Mineral, vitriolick, gross, impure, porous, or naturally pierced with many Holes, fattish, black, of an ill Smell, and a styp-tick Taste. It is found in the Mines of *Cyprus*, *Spain*, *Libya*, and *Ægypt*; and, as *Matthiolum* says, it is found in the Dukedom of *Brunswick*. Many have thought it to have been a *Chalcitis* grown old, and that has lain long in the Mine; but there is more Probability that it was a Mixture of Vitriol and Bitumen calcined by subterranean Fires. There has been none of it found for many Ages, at least it has been neglected, and we substitute the *Chalcitis*, or natural red Vitriol in the Room of it. It was drying, burning, and astringent, not much differing from *Misy*, but of thicker and grosser Parts, and therefore less piercing.

[The natural *Chalcitis* is the *Chalcitis*, *Worm*. 26. *Aldr. Mus. Met.* 240. *Kentm.* 15. *Chalt. Foss.* 11. is a Fossil Substance resembling Copper, brittle, but not stony, and variegated with a Mixture of shining Veins, and in the Fire turns to a Red Lead or Blood Colour: it is acrid and astringent, is used in Hemorrhages, and is an Ingredient in the *The-riaca*: but as it is very scarce, the common *Colcothar* of Vitriol, or Vitriol calcined to a Redness, are used in the Place of it.

The *Misy*, *Sory*, and *Melanteria* are Fossil Substances, much resembling *Chalcitis*, and each other, and are found chiefly in the Mines of *Cyprus*. *Galen* says, he found the *Chalcitis*, *Misy*, and *Sory* in the Mines, lying in long *Strata* upon each other; the *Sory* at the Bottom, *Chalcitis* in the Middle, and *Misy* at the Top. He also affirms, that *Chalcitis* certainly, in length of Time, changes
Q 2 into

into *Misy*; for that having kept a Piece of *Chalcitis*, which himself took out of the Mine, thirty Years, he found the outer Surface of it changed into *Misy*, the Middle remaining unaltered; he also observed some small Alteration in *Sory*, which made him conclude, that it is in like Manner changeable into *Chalcitis*. The first of these is the *Misy*, *Worm*. 26. *Aldr. Mus. Met.* 341. *Charlt. Foss.* 11. *Kentm.* 15. It is a Fossil yellow Substance, shining like Gold, and sparkling when broken, growing from *Chalcitis* as Verdigrise does from Copper, and seeming to be nothing more than an Efflorescence from it. It is escharotic and astringent.

The *Sory* is the *Sory*, *Worm*. 26. *Ald. Mus. Met.* 341. *Charlt. Foss.* 11. *Kentm.* 15. It is a Fossil Substance, firmer, harder, and more compact than *Chalcitis*, which emits Sparkles by Attrition: it is spongy, full of Holes, of a viscid Texture, black Colour, astringent nauseous Taste, and of a very strong Smell. The *Rusma*, used by the *Turkish* Ladies as a Depilatory, seems to be this very Substance from *Bellonius's* Description: It is a violent Emetick.

The *Melanteria*, is the *Melanteria*, *Worm*. 26. *Ald. Mus. Met.* 341. *Charlt. Foss.* 11. *Atramentum nigrum seu Sutorium Græcis Melanteria*, *Kentm.* 14. It is of two Kinds; the first found like concremented Salt, in the Passages to Copper Mines; the other hanging down from the Top of the Mines. The best is reckoned that which is of a pure Sulphur Colour, smooth, clean, and even; and which turns black as soon as it touches Water. It has the same Virtues with the former, but is, like them, scarce ever to be seen in the Shops.]

20. Of Roman Vitriol.

Porret. **R**OMAN Vitriol is a Salt partaking of a mineral Quality, and composed of a sulphureous Earth: its Origin may be ascribed to a Sort of Marcasite, found in Iron and Copper Mines, to which the Antients have given the Name of *Pyrites*: It is drawn from this by the Means of Water. This Stone is found under our Clay-pits at *Passy*, within a League of *Paris*, and several Operations have been performed upon it; and, as I have been assured, it was with this that a certain Abbot made his universal Medicine. The *Pyrites*, from whence they extract the *Roman Vitriol*, is found in several Parts of *Italy*. To reduce this Marcasite to Vitriol, they expose it for some Time to the Weather, that so the Air may penetrate into it, and that it may calcine and turn into a Calx of a greenish Colour. When the *Pyrites* is fit for working, they throw it into Water, and afterwards, by the Help of Fire and wooden Tubs, reduce it to Crystals, such as we receive from *Italy*.

In a word, all the Vitriols are made as they make Allum in *England*, or Salt-petre with us. All the Difference that there is between the several Vitriols proceeds from the different Places where the Mineral is found; and as it participates of the Copper or the Iron: The Vitriols which have most of the Copper are those of *Cyprus* or *Germany*: They which have most Iron are the *Roman Vitriol*, and that from *Pisa* and *England*. When the first are rubbed upon the Blade of a Knife, wet with Spittle, they make it look red; on the contrary, the *Roman Vitriol*, and that of *Pisa* and *England*, do not change the Colour of the Knife-blade: And this has given some People an Opportunity of counterfeiting *Roman Vitriol* by *English*, which they do by washing it a little, and exposing it to the Air for some Days, till from a green it turns to a greyish Colour; but this is easy to be found out, because the true *Roman Vitriol* is in thick long Pieces, of a Grass Green, very difficult to melt, and being broke, is transparent as Glass; from whence (the *Latin* Word for Glass being *Vitrum*) some pretend that it takes its Name: Others will have it, that the Name of *Vitriol* is mysterious, and that every Letter of it is the initial Letter of a Word; so that it is as much as to say, *Visitando Interiora Terræ, Rectificando Invenies Occultum Lapidem, Veram Medicinam*.

The true *Roman Vitriol* is much sought for at present, both because of its Scarcity, as well as because it is the most proper for the making a white Powder, which they call the *Sympathetick Powder*, which is only *Roman Vitriol* exposed to the Air and the great Heat during the Dog-days for a considerable Time. When it becomes extremely white by the Calcination which the Sun has given it, it is made use of for Wounds, and to stop Blood. Some mix Gum *Tragacanth* with it. They bring us likewise from *Italy* another *Vitriol*, which comes near the Colour of the *Roman*, only it is greener, and in lesser Pieces, and is what we call *Vitriol*, or *Copperas* of *Pisa*, and is made use of by the Dyers.

The third *Vitriol* is of a martial Nature, and as it is more common, is also cheaper; this is the *English Vitriol*, or common *Copperas*: It is much used by Dyers, Hatters, and others, who have occasion for a black Colour; and they say that that which makes the *Copperas* dye black, is because the Stone it is prepared from participates of the Iron; others will have it, that it is because they who make it throw old Iron into the Liquor.

The necessary Qualities in right *English Copperas* is, that it be dry, of a clear transparent Green, with as few small and whitish Pieces as possible.

Of the Cyprian or Hungarian Vitriol.

This *Vitriol* has its Name from the Places from whence it is brought; it is of a Sky-blue, and in large Crystals. Notwithstanding all the Pains I have taken to discover what the *Vitriol* of *Cyprus*, which we sell, might be, I have not been able to learn it. The Sentiments of Authors differ exceedingly about it, some say it is a Crystallization made of a blue Water which is found in Copper Mines. A Person of Worth and Honesty has affirmed to me, that the *Vitriol* of *Cyprus* was made of Rose Copper dissolved in the Spirit of *Vitriol*, and afterwards crystallized. Another has told me, that it was made of *German* Copperas; but not knowing which Part to take amongst the three, I shall only say, that it partakes of Copper, and that two Sorts of it are brought to us from *Cyprus*; one in large Pieces, which we call the *Company's Vitriol*, because the Merchants trading to the *Indies* bring it to us; the other cut into Bits on Purpose, with Points like Diamonds, to make it look more beautiful, and promote the Sale.

The *Vitriol* of *Cyprus* or *Hungary* is to be chosen of a fine sky-coloured Blue, especially when broken; for being a Commodity easily to be penetrated by the Air, it will come to be of a whitish grey on the Outside, which does not at all diminish its Goodness, but renders it not so saleable to the Eye; and a Sign that it is the Superficies only that is damaged, is this, that by putting it to the Tongue, upon the Approach of the least Moisture, it will come to its Colour. Some Persons have assured me, that so piercing a Spirit is drawn from the *Vitriol* of *Cyprus*, that it will break any Glass Vessel of whatsoever Thickness; and yet though so piercing, being mixed with an equal Quantity of Water, it is a sovereign Remedy for consolidating all green Wounds, and stopping of Blood; which is probable enough, because we have no Drug more astringent, or that stops Blood better than the *Vitriol* of *Cyprus*. This *Vitriol* is much used by several Artists. Some Persons carry it about them for Blotches in their Face.

This, as well as the *Roman*, is used for the sympathetic Powder.

Of German Vitriol, or Copperas.

The *German Copperas* is a *Vitriol* of a bluish Green, clear and transparent, which is made and crystallized at *Gosselar* in *Saxony*, whence it is that this *Vitriol* is called *Gosselar*, or *Saxon Vitriol*. The largest Pieces, clearest, and most transparent, are to be chosen, and the driest that can be.

The *German Vitriol* is of much use in Medicine, as being that from whence the Chymists

draw most of their Preparations, as shall be shewn hereafter. It is also this Kind which is used in making *Aqua fortis*. It is likewise used by the Dyers. This may be used for stopping Blood in Case of Necessity, instead of the *Vitriol* of *Cyprus*, but it has not so much Efficacy.

Of White Vitriol.

The *White Vitriol* which we fetch from *Germany*, is the Copperas of *Gosselar*, beforementioned, calcined to Whiteness, and afterwards put into Water and filtered, and reduced to Salt; and when it begins to coagulate, the *Germans* make it into Lumps of forty or fifty Pound Weight, of the Shape we see them in. It is therefore an Abuse put upon us by a modern Author, who would make us believe that the white Copperas is found near Fountains, and is the most purified of all from any metallick Substance. This Copperas ought to be pretty hard, white, and of the nearest Resemblance to fine white Sugar that can be. Care must be taken to keep it from the Air, for when that gets to it, it becomes yellow and unsaleable.

This Copperas is of some Use in Physick: People put it into Rose or Plantain Water, with Orice and Succotrine Aloes, to cure Diseases of the Eyes. Painters use it, when calcined, to put in their Colours that they may dry; but Farriers use the greatest Quantities of it.

By Help of the Spirit of Vitriol they draw Crystals from this white Copperas, which are what we call *Gilla Vitrioli*, or emetick Vitriol, because being taken from twelve Grains to a Drachm in Broth, or other Liquor, it gives an easy Vomit. An aperitive Mineral Water may be made by dissolving ten Grains of this *Gilla Vitrioli* in ten Pints of River Water.

Of the Spirit, Salt, and Oil of Vitriol.

They draw from the *German* or *English* Vitriol, calcined to a Whiteness, by means of Fire and a Retort, a Phlegm, a Spirit, and an Oil; but because the Operation is long and troublesome, I should not advise any one to concern themselves with it: Besides, the Spirit and Oil of Vitriol, which we Apothecaries and Chymists in *France* make, is not near so good, nor can be afforded so cheap as those brought from *England* and *Holland*. This must be taken Notice of, that what we call Oil of Vitriol, is only a Spirit well rectified from its Phlegm, and not an Oil; for Oils are fat Substances, and will swim on Water, but the Oil of Vitriol is not such, but easily intermixes with watry Liquors.

That which is called *Spirit of Vi-*
Liquor which comes immediately after it.

which, if right, ought to be as clear as Water, of a Taste something sharp, and being put upon white Paper, and held to the Fire, become black. They use this Spirit of Vitriol very commonly in Physick for Cooling, and upon other Occasions. The Spirit of Vitriol, well cleaned of its Phlegm, is what we improperly call *Oil of Vitriol*; it ought to be of a dark Colour, of so piercing and caustick a Taste, that it is impossible to endure it upon the Tongue. They are in the wrong who think that acid Spirits need not be stopt, because they pretend that they do not evaporate, which is true; but this Spirit being thoroughly divested of its Phlegm, if you leave it in a Bottle unstopped, the Air gets into it, increases its Bulk and Weight, and at last becomes as insipid as Water.

The Oil of *Vitriol* is very corrosive, and therefore made use of to dissolve Metals: It is taken inwardly for the same Distempers as the Spirit, but must be used in lesser Quantities, because it has greater Strength in it. Spirit of Vitriol should be bought of such Persons as one can trust, because there are some who make Spirit of Vitriol, by mixing *Aqua fortis* with Water, which they are able to afford at a cheap Rate; and this Spirit of Vitriol, made with *Aqua fortis*, is called the *Philosophick Spirit of Vitriol*, of which you must carefully beware.

As to the Water and Phlegm of Vitriol, which I mentioned before, it is of no Use because it is insipid, yet some People wash their Eyes with it.

Monsieur *Lemery* says, that you must use *English Vitriol*, or *Copperas*, for the forementioned Operations, because it is not of such Acrimony as the *German*: However all they who work with Vitriol make use of the *German*; but I leave the Decision of this Point to them that have more Experience in it than I have. That which remains in the Retort, after Distillation, is a reddish Earth which the Chymists call the *Caput Mortuum* of Vitriol, artificial *Colcothar*, or rubified Vitriol. One may draw a Salt out of it by the Means of Water and Fire, which is what they call *Salt of Vitriol*, and is made use of as *Gilla Vitrioli*, only not to be taken in such large Doses. The Salt of *Vitriol* ought to be white, and faithfully prepared; it is a common Deceit to sell the *Gilla Vitrioli*, or green Vitriol calcined to a Whiteness, for the Salt of *Vitriol*.

The *Colcothar* has some little Use in Medicine, forasmuch as some People employ it instead of *Chalcitis*, because it is cheaper, and has the same Qualities. Some Apothecaries put *Colcothar* into their *Diapalma*, as well to make it red, as to humour the Surgeons, who are pleased that the Publick do not know that it is nothing but *Dia-*

palma; and to disguise it the better, they call the Plaister by the Name of *Diachalciteos*.

They make with the *Colcothar*, burnt Alum, Sugar-candy, Urine, and Rose-water, a very astringent Water, and proper for stopping of Blood, as Monsieur *Lemery* has observed, to whom the Reader may have Recourse. There is also another styptick Water of Monsieur *Faveur*, described by Monsieur *Gharas*.

It is to be observed, that the *Colcothar* is improperly called *Calcanthum*, because the Word *Calcanthum* signifies nothing else but Vitriol.

Vitriol is a mineral Salt drawn, as Salt-petre, by Lotion, by Filtration, by Evaporation and Crystallization, from a Sort of Marcasite, called *Pyrites* or Fire-Stone, of which I shall speak in its Place. It is found in the Mines in several Parts of *Europe*, as in *Italy* and *Germany*: There are some Sorts also found about *Paris*.

This Fossil or Mineral, consists of an acid Salt, Earth, Iron, and Copper. The distinguishing Mark of Vitriol consists in the black Colour, which it communicates to an Infusion of Galls. That it is an acid Salt appears plainly, not only by its being chymically analyzed (for a great many cavil, that an acid Spirit may be produced by the Violence and Force of the Fire) but also from the bright red Colour that a Solution of Vitriol imparts to blue Paper. The Earth of Vitriol precipitates or falls to the Bottom of the Crucible, when the Solution of fixed Nitre is poured upon a Solution of Vitriol. As to Iron and Copper, it is not to be doubted that they are contained in Vitriol; for by pouring the Spirit of Salt, or Vitriol, upon the Filings of Iron, an excellent Vitriol of *Mars* or Iron is made, and by placing Plates of Iron or Copper in a Crucible, with some common Brimstone interspersed, a Vitriol is produced by the Help of Fire: Wherefore it is very probable that the Vitriol of *Mars*, or Iron, and the Vitriol of *Venus*, or Copper, are bred in the Bowels of the Earth, from the acid Juices or Liquors corroding the Copper.

White Vitriol, vulgarly called *Eye Copperas*, is a Mineral Vitriolick Salt, found in the Earth near unto Fountains, and the most of all depurated from a metallick Mixture; or it is made by dissolving the *Roman* or dark Green Vitriol in Water, and then boiling it till all the Water is evaporated, and the Vitriol turned into large white Lumps like Sugar, which being exposed to the Air, turn outwardly of a reddish or yellowish Colour. It is the least acrid of any of the Vitriols.

It is to be chosen in large white Lumps, pure and clean, resembling Loaf Sugar, of a sweet Taste,

Taste, astringent, accompanied with an Acrimony. It contains abundance of Phlegm and acid Salt, a little Sulphur like common Sulphur, and some Earth.

The white natural Vitriol needs no Manner of Preparation, being of great Use and Force in a Looseness and Bloody Flux, and frequently used for that Purpose in Camps and Hospitals. The other White Vitriol is thus purified: Take White Vitriol, what Quantity you please, dissolve it in Phlegm of Vitriol, or in Rain Water; then filtrate, evaporate, and set it to crystallize. This is that which is called *Gilla Vitrioli*, and *Gilla Theophrasti*.

It heats, desiccates, astringes, or constipates, yet excites Vomiting. It powerfully extricates tough Phlegm out of the Ventricle, by its emetick Force, yet may be given to Children. It kills Worms, and strengthens the Stomach and Brain, and is good against Convulsions and Epilepsies; it cleanses and strengthens the Womb, and is used in Injections against a *Gonorrhœa*, and the Whites in Women, a Drachm thereof being mixed with a Pint of Spring Water, and so used with a Syringe. Inwardly, as a Vomit, it is an excellent Remedy against Fevers; Dose from twelve Grains to a Grachm in Broth, or other Liquor. It cleanses the Stomach from all Impurities, eases the Head-ach, stops Fluxes, and is good against *Quotidian* and *Tertian* Agues.

There are two Things observable in Regard to this *Gilla Vitrioli*, *First*, That in making it all the Liquor may be evaporated away without any Crystallization, so the *Gilla* will remain at the Bottom in a white Powder. Next, that after taking this Vomit, the Sick sometimes voids by Stool a black Matter, like Ink; because it often happens that some Part of the *Gilla* descending into the Guts, meets with a styptick Matter, almost of the same Nature as Galls, which causes that Blackness.

The sympathetick Powder is white Vitriol opened and prepared; it ought to be placed upon a Stone, so as to receive the Beams of the Sun reflexively, from a large Burning-glass, by which it will be sooner done than by any Furnace whatsoever, and the calcined Powder is to be kept in a Glass close stoppt for Use. It is used in the magnetick Cure of Wounds. Dissolved in Water, and used outwardly, it dries, binds, and heats much, and has the Virtue of the *Gilla*.

The *Aqua Styptica Composita*, or the Compound Styptick Water, is made of this Vitriol, and other Ingredients in the following Manner. Take purified white Vitriol, Roch Alum, of each an Ounce; *Saccharum Saturni*, half an Ounce; Spring Water, two Quarts; mix and dissolve over

a gentle Heat, digest close stoppt ten Days; decant the clear, filtrate, and keep it for Use. This is an easy Preparation, and of few and simple Ingredients, but of no mean Use. It is a good Injection (Universals being first premised) against the Whites in Women, and the *Gonorrhœa* in Men, though of never so long standing, and possibly may do more in two, three, or four Days Time, being injected, than all other Medicines could do in as many Years: It stops Bleeding in any Part, heals Ulcers, and infallibly cures all Sorts of Tethers, Ringworms, Scabs, Scurf, Morpew, and inveterate *Herpes* in any Part of the Body, if daily washed therewith, two or three Times a Day, for half an Hour at a Time, and as hot as can be endured; injected as a Clyster, it kills the Worms called *Ascarides*.

There are several Sorts of Green Vitriol, as the *German* or *Hungarian* Vitriol, the *English* Vitriol, and the *Roman* Vitriol.

As for the *Green Hungarian* Vitriol, the Native is found in Mines like Copper. The Factitious is made of the Marcasite, called *Pyrites* or the Fire-Stone, with or without Additions of Copper, and is brought to us from *Dantzick*, out of *Germany*, *Hungary*, &c. The best is the greenish, and of that, that which participates more of Copper than of Iron, which rubbed on a Knife, colours it red; that which is subceruleous, pale, aquose, and moistens the Hands, is not so good.

The Factitious is that which is made either of Water coming from vitriolick Springs, evaporated and crystallized, or else made from vitriolick Marcasites, the *Pyrites*, or Fire-Stone (with Additions of Copper) which is found in Grounds abounding with metallick Seeds, and inclined naturally to the Generation of Sulphur. It is known by burning, for it yields a sulphureous Fume, not unlike Brimstone. This powdered and exposed to the Air, yields on its Superficies a little white and sharp Salt melting in the Mouth, at first sweetish, then ending in a vitriolick Harshness. From this Powder Vitriol is thus extracted; it is dissolved in Rain Water, by boiling in a slow Heat, then filtrated, evaporated, and crystallized; so you have an excellent greenish Vitriol.

Out of any of these three Kinds of greenish Vitriols, all the great and famed Medicines are made. It goes sometimes by the Name of *Dantzick* Vitriol; it may be purified after the same Manner as the white, and the *Gilla* of it has all the Virtues as the other, but is much stronger, and ought to be given with Caution and Discretion, and only to strong Persons; and if given to the Sick, they ought to be provoked to vomit, lest it should ulcerate the Tunics of the Stomach and Bowels.

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The sympathetick Powder is much better to be made with this than with white Vitriol, as being much more powerful to all the same Intentions of curing Wounds, and the like: And as to the Compound Styptick Water of white Vitriol, the same may be done with the *Hungarian*, only the Proportion of it must be something less. It is superior in Virtue, and may do Wonders, if in a wise Man's Hand; but for vulgar Use the former is better, because it may be trusted with Persons that are less skilful, and there will be no Danger of their doing Mischief with it.

The Styptick Water of Monsieur *Favcur* is made after this Manner: Take of Vitriol twenty-five Pounds, dissolve it in fair Water, strain it through a coarse Cloth, boil it in a Copper Vessel for a Quarter of an Hour; remove it from the Fire, and put to it immediately half a Pound of Spirit of Vinegar to cause the earthy Parts to settle; let it stand twelve or fourteen Hours, that the *Terra* may precipitate, then decant the clear Liquor. This *Terra* or Precipitate wash well, dulcify, and dry over hot Embers; of which take eight Ounces, put it into a Glass Retort, upon which pour Spirit of Vitriol, well rectified from its Phlegm, eight Ounces; distil with a gradual Fire, soft at first, and at length very violent, continuing it so till nothing more will come. Take the *Caput Mortuum*, reduce it to Powder, and with Alcohol, or tartarized Spirit of Wine, enough to cover it five Inches over, in a Matrafs well luted. Set it in a soft Heat to digest for twenty-four Hours, till the Spirit of Wine becomes very red; filtre it hot, and draw off the Spirit in a Glass Alembick, so you have at the Bottom a whitish Powder: Take of this Powder one Ounce; Rain Water four Ounces, digest in the Sun for some Days, then filtre and keep it for Use: But the same Person, in making the same Water, did sometimes put double the above limited Quantity of Spirit of Vitriol, and then only drying the *Caput Mortuum* in a Crucible till it became yellowish, he to two Ounces of it put only three Ounces of Rain Water; digested them together for some Hours, then filtrated, and kept the Liquor close stoppt for Use, as an extraordinary Remedy against all Hemorrhages, or violent Fluxes of Blood.

To conclude, the *German* or *Dantzick* Vitriol is in green Crystals, inclining to a blue, of an astringent acrid Taste; it participates of Copper, and is that which is used to make *Aqua fortis*.

The *English* Copperas is in Crystals of a dark green Colour, of a sweet astringent Taste, coming near to that of white Vitriol: It participates of Iron, and does not make it change its Colour. It is more than half of it Phlegm, a great deal of

acid Salt, Sulphur, and Earth. One may draw from this Vitriol a very good Spirit of Vitriol by Distillation, as I have shewn in my Book of Chymistry.

This Vitriol is made in *England*, upon the River of *Thames*, from vast Quantities of the *Marcasite Pyrites*, or Fire-Stone, with the Addition of old Iron. Of this Copperas, with Galls, or any other astringent Vegetables, you may make Ink, and the Black for Dyers; yet some think that the Vitriol of Copper is better, because that Experience teaches the Refiners that *Aqua fortis* made with Copperas, or Vitriol of Iron, will carry its Foulness through all their mediate Solutions.

Dark Green, or *Roman* Vitriol, vulgarly called *Common Green Copperas*, is prepared about *Rome* in *Campania*, being extracted out of Clots or Lumps, of an Ash-colour inclining to black, like Potters Clay; which being exposed to the Air, gradually heat and ferment, and being dissolved some Days after in fair Water, they yield this Sort of Vitriol, but from the fresh Clots no Vitriol can be obtained. The *Roman* Vitriol is also prepared in some Parts of the Kingdom of *Naples*; it is of a paler Green than the *German Vitriol*, but almost of the same styptick Taste.

The blue Vitriol, or celestial Stone, is called *Cyprian*, or *Hungarian Vitriol*, because it is brought to us from those Countries. It is in Crystals of a very fine sky-coloured Blue. It is not certainly known after what Manner it is made; some think it is extracted by the Evaporation and Crystallization of the blue Water that is found in the Copper Mines: Others say it is an artificial Operation, performed by a Dissolution of Copper, in a weak Spirit of Vitriol, evaporated and crystallized. However it be, it participates much of the Copper, which gives it the blue Colour. It is acrid and something Caustick; it comes in great and lesser Pieces; the little ones are pointed like Diamonds. It contains much acid Salt, or a corrosive Acid of Sulphur, but less Phlegm and Earth than other Vitriols.

The artificial Vitriol of *Venus* is made by taking little thin Pieces of Brass, about the Bigness of a Shilling; first put a Layer of Sulphur, then a Layer of Pieces, filling a Pot full, *Stratum super Stratum*, and calcine in a Furnace for two or three Hours; or calcine first the Copper by itself, and then beating the *Calx* to Powder, calcine it again, having first mixed with every Pound of *Calx* six Ounces of Sulphur, stirring it continually as it burns, that it may not stick to the Pan, and become black. Powder the *Calx* again, and calcine and repeat it three Times, till the *Calx* becomes very red. Take of this red *Calx* in Powder

one Pound; fair Water six Pounds; boil them together for about four Hours; let it cool and settle; decant the clear sapphirine Liquor, and filtrate it after it has stood about two Days. The remaining Copper calcine, as before, with Sulphur three Ounces; and with Water in like Manner draw the Tincture. This Process of calcining, boiling, settling, and filtrating is to be done six or seven Times, till with the Water you have extracted the whole sapphirine, azure, or blue Tincture out of the Copper. These blue filtrated Liquors put together, in a large earthen Bell, in a Sand Heat, not violent; evaporate the Water till a Pellicle arise, which being then put into a cold and moist Place for a Night, will shoot into Crystals like great Gems. *Glauber* extracts the Tincture from calcined Copper, with Spirit of *Sal Armeniack*, by frequent Ignition and Extinction, and in an Hour's Space extracts a blue Colour; which being set to crystallize in a cold Place, shoots into most elegant blue Vitriol. *Beguinus* does it with Spirit of Vinegar; but then the Vitriol will be of an obscure green Colour.

The native blue Stone is good against Diseases of the Eyes, taking away Films, Clouds, Pearls, &c. Rheums, Redness, Inflammation, and Blood-shot, if you take the Stone and put it into a little Spring or Well Water for about two Minutes Time, and then take the Water with a Linen Rag to wash the Eyes, and drop two or three Drops into them at Bed-time. It cureth any running Sore, or Ulcer, or inveterate *Fistula*, Tetters, Ringworms, Scurf, &c. but for these latter Diseases the Stone ought to lie in Water for a Quarter of an Hour. It also helps the Canker in the Mouth, by rubbing the Place with the Stone, and washing the Mouth with the Water.

The factitious blue Stone is given from two or three Grains, to twelve or fifteen, in proper Liquors, against Diseases of the Head, Stomach, and Parts of Generation. It is often used in Injections in proper Vehicles, one Drachm to one Pound of Liquor, for all Sores, Ulcers, Scabs, Itch, Tetters, or any other cutaneous Disease. Inwardly it kills the Worms. It may be given in a small Dose against Diseases of the Stomach and Brain. It strengthens the Brain against a growing Epilepsy. It is also a Specifick to cleanse the Womb; and it is held as a great Secret, to dissolve a little of it in Water, against the burning and intemperate Heat of the spermatick Vessels, and so to use it for Injections: For as this Vitriol possesses a large Portion of the Sulphur of *Venus*, which is able to appease the Irritation of those Parts, so also it produces rare and eminent Effects, by virtue of its deterfive and refrigerative Salt.

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The red Vitriol, called *Calcanthum*, is a Vitriol that has been naturally calcined in the Mines by subterraneous Fire, or artificially by ordinary Fire. That which is found naturally in the Mine, is called *Chalcitis*, because it is taken from Copper Mines. It is a brownish red Stone, which is brought to us from *Sweden* and *Germany*. It is rare, and we have scarce enough of it to use in our *Venice Treacle*, of which it is one of the Ingredients.

That is best which is of a reddish brown, of the Taste of Vitriol, and easily dissolved in Water.

The *Colcothar*, calcined by the common Fire, is of a pleasant Red. The best is that which remains in the Retorts after the Distillation of the Spirit and Oil of Vitriol. Both the one and the other *Colcothar* contain a great deal of metallick Earth.

Vitriol is chymically analyzed after the following Manner: Fill a Glass Matrafs, or Cucurbit, up to the middle with Vitriol powdered; then clapping on the Head, fitting the Receiver, and luting the Joints, distil it with a Sand Heat, that the *Ros*, or Phlegm of the Vitriol, being of a strong sharp Taste, may be drawn off; then take off what remains in the Matrafs, bruise or powder it, and throw into a Retort, increasing the Fire gradually three or four Days, and you will obtain a Spirit and an Oil: And, lastly, from the *Caput Mortuum* of the Vitriol dissolved, an Earth and Salt is obtained.

The *Ros* or Phlegm of Vitriol is prescribed by the Chymists from one Drachm to two, and is mightily commended by them for its Virtues, being diuretick, vulnerary, anodyne, and good to strengthen the Bowels.

The Spirit of Vitriol provokes Urine, excites an Appetite, and allays the burning Heat of Fevers, being given in a Cup full of cold Water, to a grateful Sharpness. This Spirit may be sweetened, digesting it with the rectified Spirit of Wine; and then it may be used in Diseases of the Gums, and cutaneous Distempers.

The Salt of Vitriol is endued with an emetick Faculty. It may be given from half a Drachm to two Drachms.

The *Colcothar*, or red Earth, out of which the Salt was extracted, is effectually used in a Looseness, Bloody Flux, Hemorrhages, and Wounds.

The spiritous Parts of Vitriol may be easily again recovered, if you expose the *Caput Mortuum* for some Time to the open Air, keeping it from Rain; so that by Distillation you may obtain another Spirit: But this Spirit is a great deal sweeter and weaker than the common.

Paracelsus corrects the Spirit of Vitriol by
R pouring

pouring it upon the *Caput Mortuum*, and then distilling it nine Times over, every Time pouring on more fresh Spirit; and taking it out of the Alembick, he put it into a Retort, and distils it over again with as much Spirit of Wine as is sufficient to make it into a Paste. This he highly commends in an Epilepsy, or Falling Sicknefs.

[*Vitriols* are either natural or fictitious; the former are found in Crystals, or *Siræ*, sticking to the Roofs and Sides of Mines; the latter are obtained by various Arts from Waters, Earths, Stones, vitriolick Veins of mineral Ores, and particularly from the *Pyrites*: the most usual Ways of obtaining them are by Fermentation, Coction, and Crystallization. In *Galen's* Time, blue *Vitriol* was made in *Cyprus* by the Sun's exhaling vitriolick Waters; and the same Kind is now made in *Hungary*, by boiling and evaporating a Water of that kind; and the green *Vitriol* of *Germany* is, at this Time, made by a Method not much different. It is also made in some Places by Ablutions of an ash-coloured Earth, spotted with Specks of a Rust of Iron Colour; and others of a Verdigrise Colour, with a strong sulphureous Smell, an unpleasant acerb Taste. This *Vitriol* is therefore composed of a Mixture of Iron and Copper, and accordingly its Colour is between blue and green. The other common *Vitriols* of the Shops are, 1. The blue *Vitriol*, the *Vitriolum Cæruleum*, *Charlt. Foss. 11. Vitriolum Cyprinum Cæruleum*, *Worm. 25. Calcanthum Cyprinum*, *Ald. Mus. Met. 329.* This is brought to us from *Cyprus* and the *East-Indies*, and is made from Copper, or Coppery Waters, by Solution and Crystallization.

2. The green *Vitriol*, or common Copperas, is the *Vitriolum Viride*, *Charlt. Foss. 11. Calcanthum Viride fictitium*, *Atramentum Sutorium Officinarum*, *Schæw. 273. Atramentum Viride durum solide coctum. 13.* This is made in *England*, principally at *Rotherhithe* and *Deptford*, from a ferrugineous Kind of *Pyrites*, common on the Eastern Shores of *Sheppey* Island, and in other Places, with a Mixture of rusty Pieces of old Iron by Coction and Crystallization. The Copperas Stones are heavy, dense, and of a darker or paler Colour on the Outside; but their inner Surface is marked with Lines or Spangles of a Gold or Silver Colour. They are insipid to the Taste, and by lying long in the open Air, acquire an intestine Fermentation, and fall spontaneously to Pieces.

3. The *White Vitriol* of the Shops, is the *Vitriolum Candidum*, *Charlt. Foss. 11. Calcanthum Candidum*, *Ald. Mus. Met. 339. Atramentum Album durum Fossile*, *Keutm. 13.* It is an Error to think that this is a Preparation of any of the other *Vitriols*, for it is found in proper Mines like a downy

Efflorescence, which is dissolved in Water, is boiled to Evaporation, and formed into Cakes. It is also sometimes found in the Mine in small transparent Pieces like Crystal. This is used as an Emetick, and in Diseases of the Eyes.]

Of the medicinal Stone of Crollius.

The Stone of *Crollius* is made of *Englisch* Copperas, white *Vitriol*, Allum, white Pot-ashes, or *Natrum* of *Ægypt*, common Salt, Salt of Tartar, Salt of Wormwood, Salt of Mugwort, Salt of Succory, Salt of Plantain, Salt of Arsinart, white Lead, Bole Armoniack, Myrrh, Frankincense, and Vinegar of Roses. Of all these in proper Quantities, as they are set down in *Crollius*, *Pag. 442.* by the means of Fire, is made a red Stone, endued with very excellent Properties, which would be too long to be described in this Place: But as this Stone is of great Consequence, both because it costs a great deal of Money, and because few Persons have the true Knowledge of it, the greatest Part of the Apothecaries substitute in the Room of it the medicinal Stone described by Monsieur *Charas*, because they can afford it cheaper than they who sell the true Stone of *Crollius*; this latter being made of Drugs of a much lower Price, as shall be shewn hereafter.

Of the other medicinal Stone.

Monsieur *Charas*, in the Page 1041 *Pomet.* of his *Pharmacopœia*, describes a medicinal Stone composed of the *Vitriol* of *Cyprus*, Salt of Nitre, white Lead, Allum, Bole Armoniack, Sandiver, *Sal Armoniack*, and common Vinegar; so that one may see by these two Descriptions, that there is a great deal of Difference betwixt this Stone and that of *Crollius*: And that more of this is likely to be sold for its Cheapness than of the other.

Of the Lapis Mirabilis.

The *Lapis Mirabilis* is so called because of its great Properties; above all for the Cure of Webs, and other Diseases that happen to the Eyes of Horses.

This Stone is made by putting into an earthen Pot white Copperas, Alum, Bole-Armoniack, Litharge, and common Water, as Monsieur *Solleysel* has remarked in his Book, *Pag. 86.* to which they that have Occasion may have recourse, as well to know the Dose, as those excellent Qualities by which it obtained such a Name.

These, and many other medicinal Stones, have been

been once in great Repute, but are now never prescribed or made.

21. Of the Pyrites, or Fire-Stone.

THE *Pyrites*, or *Fire-Stone*, is a Sort of *Marcasite*, of which they make their *Copperas's* or *Vitriols*. This *Marcasite* is weighty, of a Mouse Colour, full of little, yellow, shining Spots.

There is a great Quantity of this *Fire-Stone* in *France*, especially at *Passy* near *Paris*.

It is no Impropriety to call the *Vitriols* *Copperas's*, because the Word *Copperas* is derived from *Cuprum*, Copper.

Pyrites is a Sort of *Marcasite*, or *Lemery*. hard Stone, heavy, which sends forth

Sparks of Fire upon striking it with Iron, of a grey Colour, interspersed with little, yellow, shining Streaks: This Kind is found in the Copper Mines in *Italy*, from whence they draw the *Roman* *Vitriol*.

To get the *Vitriol* out of this Stone, it is necessary to expose it to the Air for several Months together, that so the Acid getting insensibly into the Pores, may rarefy its Parts, and render its Salt more dissolvable. By Time it is converted in a Manner to a *Calx*, from whence they extract the *Vitriol*, by washing it several Times with Water, and making *Evaporations* and *CrySTALLIZATIONS* as are necessary, as they do in the making of *Salt-petre*.

The *Pyrites* is deterfive, astringent, desiccative, digestive, resolute, applied outwardly.

[*Pyritæ*, or *Marcasites*, are of various Kinds, found in almost all Mines and Pits, and partaking of various Metals, Salts, and Sulphurs; according to the Quantities of which that are contained in them they vary in Shape, Colour, Size, and Weight. It would be not only tedious, but improper to enter into a long Detail of them here, as none of them are now ever used in Medicine in their natural State.]

22. Of Lead Ore.

Pomet. **L**EAD is a livid, terrestrial, heavy Metal, charged with Sulphur, naturally soft and malleable, very like Tin, but inferior in Goodness. The Chymists call it *Saturn*, because of the Influences they suppose it receives from that Planet.

We have three Sorts of *Lead Ore* that differ one from the other, only according to the Digestion they have received in the Bowels of the Earth. The first, that is to say, that which has received the least Heat, and by Consequence is most weighty, is that

which has the Name of common *Lead Ore*, and this is what is made into the Lumps called *Pigs*.

This *Lead Ore* is a weighty Mineral, easy to break to Powder, and difficult to melt: it is taken out of the Mine in Pieces of different Bigness; sometimes clean and neat; sometimes mixt with Stones, resembling a certain Sort of Marble.

This *Lead Ore* being broken, parts into shining Flakes, of a white enclining to black, very like the Shoots of Antimony.

The *English* melt this Lead, and afterwards cast it into Moulds of the Shape we see the *Pigs* in. The *Lead Ore* is of no other Use in *France* but for the Potters, who make use of it, having first reduced it to Powder, to varnish the earthen Vessels of a green Colour with it.

Although this Merchandize be of no great Consequence, yet great Care must be taken concerning it; for if there should chance to be any other Metal in it, as there is found to be too often, it will spoil all the Potters Ware, to the great Trouble of him that sold the Commodity; for this Reason you should never sell it to the Potters, without shewing it them Piece by Piece, and taking a Note under their Hand, that they are satisfied, to avoid further Trouble.

This *Lead Ore*, to have the requisite Qualities, ought to be in large Pieces, heavy, with fine shining Scales, fat, that is to say, soft in handling, in a word, the most approaching to *Bismuth* that it can possibly; reject that which is full of Stones and Dirt, or Gravel, as good for nothing, as well as that which is mixt with the *Lead Ore* of the second Sort that I am going to speak of.

The second Sort is a *Lead Ore* less weighty and much harder than that beforementioned, and being broken is of a Mouse Colour, of a coarser Grain, smooth without, in some Measure resembling the black Lead; which shews that it has not received Heat enough to be converted into the black *Lead Ore*. This is to be entirely rejected, as being of no Use: And some of this is often found in the first Sort, which is what causes so much Trouble to the Workmen, because they can no more melt it by the Fire than they can do Marble, and it spoils all their Work. However, I must take notice, that some Alchymists enquire after it to draw their Lead out of it; for they pretend that the Lead drawn from it is more ductile and close than common Lead is found to be. Others will have it, that there is some Silver in it, which I leave other Persons to try; but as it is seldom used, I should not advise any Person to furnish himself with any Store of it.

The third Sort of *Lead Ore* is very much used, and is that we call *Black Lead*, or *Crayon*, because

the most perfect. It serves to make Pencils to design withal. The Antients gave it the Name of *Plumbago*, and of Sea Lead, because they thought it was taken from the Bottom of the Sea. Foreigners call it *Potelot*.

We have at *Paris* two Sorts of Black Lead, to wit, the fine and the common. The Fine, to be perfect, and in good Condition, should not be heavy, of a black shining Silver Colour, not too hard nor too soft, easy to be cut, and, when divided, compact in the Inside, and not gritty; of a fine close Grain, in moderate Pieces, rather long, proper to cut; that which is fit to make the long Pencils is most esteemed. Lead of these Qualities wants for no Price, the Merchant may have what he pleases, being much sought for by Architects and other Persons for drawing. This Sort of Lead comes generally from *England*; but as for the common, it is brought from *Holland*, and is of no great Use.

Monsieur *Morin*, Physician and Mineralist, has assured me that there were a great many Lead Mines in *France*, especially in *Auvergne*, from whence we might have these three Sorts of Lead; and this may be relied upon, he being a Person that would not affirm an Untruth.

Of Lead in Pigs.

What they call Lead in Pigs, is the common Lead Ore, melted and purified from the Stone and other Impurities; which being well refined, by scumming, and throwing Suet or other Grease into it, is cast into Moulds to make Pigs of different Sizes.

The Lead so refined, to have its due Requisites, should be soft, that is to say, easy to cut, pliant, and the most white and shining that can be. The different Uses that are made of Lead, as well in several Trades, as in chymical Operations, is the Reason of so large a Consumption as there is of it, as well in *Europe* as other Parts of the World.

Of Lead in Powder.

The first Preparation that is made of Lead, is the reducing it to Powder; not in the manner some Apothecaries use to reduce it, by rasping it, and beating it in a Mortar; nor as some Authors teach, by pouring it, when melted, into a round wooden Box chalked within, and so shaking it to Powder; for this is a troublesome tedious Way, and the Quantity obtained by it is so little, that it is not worth while; but by melting Lead in an Earthen or Iron Vessel, and when it is melted, by throwing into it the Dust of beaten Charcoal,

stirring it about: And in this Manner you may sooner reduce into Powder a thousand Weight of Lead, than one Ounce in a Mortar. To clean the Lead, that is, to separate the Coal from it, you have nothing to do but to wash it in Water, and dry it. Lead in Powder is very little used but by the Potters, who use it as Lead Ore for glazing their Earthen Ware.

Lead in Powder, especially that which is in a Powder almost impalpable, has some Use in Medicine, because it is an Ingredient in some Ointments, as the *Pompholyx* and others. They who refine Lead, and make Musquet Bullets, or small Shot, send us their Scum, which we sell to the Potters, and call Scum, or Lead Ashes.

Of Burnt Lead.

Burnt Lead, which the *Latins* call *Plumbum Ustum*, is Plates of Pig Lead put into a Pot with Sulphur, and by the Fire the Lead is reduced to a brown Powder.

Burnt Lead has some Use in Medicine, because it dries, and is an Ingredient in some Ointments and Plaisters. As to its Choice, there is no more to be said than that it be clean and well burnt. Some wash it, to separate the Impurities, or the Sulphur that remains in it.

Of Red Lead.

The Red Lead, which we call *Minium*, is Lead Ore pulverized, calcined, and reduced to such a red Powder as we see it. It is wrong to think that the Red Lead, which is brought from *England*, is made of the Pig Lead; the Cheapness of it shews it to be otherwise, and that it is made from the Lead Ore as it comes from the Mine; besides, Pig Lead will never come to that Redness as Lead Ore, whatever Fire you give to it.

Minium ought to be chosen for its high Colour, the finest Powder, and the cleanest that can be; and Care must be taken that it has not been washed, which will be known by its whitish Colour, and the little Lumps that are commonly in it. One may draw Mercury from *Minium* with Lime or File-Dust, but it is in so small Quantity, that it is scarce worth speaking of.

The Red Lead is of some Use in Medicine, because it is drying, and gives a Body to some Ointments and Plaisters. Painters use it as well for painting red, as to mix with other Colours, to make them dry. Potters use a great deal to glaze their Ware of a reddish Colour, and there are several other Tradesmen that have Occasion for it.

Minium

Minium is the Lead Ore pulverized, *Lemery.* and made red by a long Calcination over the Fire: this is brought from *England*, whereof that of the highest Colour ought to be chosen. It is astringent and deficcative, being used in Plaisters and Ointments. They likewise use it in Painting, and to varnish Pots of a red Colour. It is called *Minium* from the Word *Mina*, because it is made of the Lead as it comes from the Mine.

Of Ceruse.

Pomet. *Ceruse*, or Calx of Lead, is only Lead reduced to a Calx by means of Vinegar, the Vapour of which it is made to receive, and afterwards ground with Water, and put into Moulds, and so made up into little Cakes, which they dry, and put into blue Paper, as we find them. This *Ceruse*, so prepared, is that which one may truly call the Calx of Lead, and not that which we sell at present, that comes from *Holland* or *England*, it being almost all common Chalk, as I am going to relate.

The true *Ceruse* is that which we call the *Venetian*, because the *Venetians* were the first that made it; but as it is extremely dear, we have little but the other Sort, which comes from *Holland*, because the Painters esteem it as much as the *Venetian*, but they are very much in the wrong; for the *Dutch Ceruse* ground with Oil or Water, is a White of no long Duration, because of the Chalk that is in it, which does not happen to the true *Venetian Ceruse*, which is only the White Lead ground; so that if one had the true *Venetian Ceruse*, there would be no need of grinding White Lead, and consequently the Dangers would be avoided that Persons meet with by grinding it, which often occasions several Diseases, and sometimes Death itself.

If they who have Occasion for *Ceruse* to use in Medicine, or to make Salt of *Saturn*, would use the true *Venetian Ceruse*, they would find their Operations more perfect: And instead of taking the *Ceruse* in Cake, they might take the White Lead ground, and make it serve all their Purposes; but then it must be bought of honest Persons, for none but they who ground it can answer for it: However, the true White Lead is extremely white, soft, and friable.

It is to be remarked, that the *Hollanders*, to make their *Ceruse*, use only the Dust that comes in bruising their White Lead; and as this Dust could not supply so great a Quantity of *Ceruse* as is used in *France*, and other Countries, and they could not afford it so cheap as it is always sold,

they mix a sort of Marle or white Chalk with it. As for that which comes from *England*, it is still worse than that from *Holland*, because they mix more of that Chalk with it, and it is not of so good a Colour. They who grind the White Lead to make *Ceruse* of it, have Water-Mills, and afterwards they cast it in little Moulds to form it into Cakes. To have its proper Qualities, it should be extremely white, soft, friable, and dry, and the least broken or mixed with little Dust that can be, especially if it be for Sale. You should reject that which has not a good Body, but cracks in handling it, which proceeds from its being put up before it was well dried, or having been damaged by some wet coming to it.

Cerusa, or *Ceruse*, is a Lead that is penetrated, rarefied, and half dissolved *Lemery.* by the Vapour of Vinegar, and reduced into a very white Substance that is heavy and friable. When you would make this *Ceruse*, the Lead is to be beat into fine thin Plates, which are suspended or hung over earthen Pots, in which they have put Vinegar; and when the Pots are full of this Lead, they place it in a proper Heat, so that the Vinegar may, by its Fume or Vapour, have Power to penetrate and attenuate insensibly the Matter. After this has remained about a Month in the Heat, they open the Mouth of the Pot, and find all the Plates of Lead reduced into a white brittle Substance, which they call *White Lead*, and break these Plates into Pieces, which are used by the Painters. This White Lead is ground upon a Porphyry, with a little Water, and made into a Paste or Cakes, which being dried, are fit for Transportation. The Workmen, in this Commodity, chuse to put it up in blue Paper rather than any other, in order to make the *Ceruse* look whiter; the best, the purest, and whitest, is brought from *Venice*. That which comes from *England* and *Holland*, is mixed with a kind of Chalk or Marle.

Of Sandyx, or Red Ceruse.

The *Sandyx* is nothing but *Ceruse* reddened over a gentle Fire; but this *Sandyx* or *Red Ceruse*, is little used, as it is only a kind of *Minium*. Some Moderns have writ that *Minium*, or Red Lead, was made of *Ceruse* turned red upon the Fire: But there is nothing more false, and they only write by Hear-say, as is easy to prove: Forasmuch as the *Ceruse* comes from *Holland*, and the *Minium* or *Red Lead* from *England*; and besides, the *Ceruse* is always dearer than the *Minium*.

Of

Of Masticot.

Pomet. There are three Sorts of *Masticot* that are brought from *Holland*, to wit, the White, the Yellow, and the Gold-coloured. These different Colours arise from nothing but the different Degrees of the Fire they give the Powder of White Lead, of which they are made. Though the first Sort, which is that which has sustained the least Degree of Fire, is called White, yet it is not of a true white Colour, but of a whitish Yellow. The second is yellow, and endures a stronger Degree: and the third of a Gold Colour, and has sustained more Fire than the former; and they might make a fourth, by calcining it till becomes red, which makes it a true *Sandyx*. As to the Choice of them, they ought to be heavy, in an impalpable Powder, of a high Colour; they are only serviceable for the Painters; though *Lemery* says they are desiccative and useful, mixed in Plaisters or Ointments.

Of Natural and Artificial Litharge.

The *Natural Litharge*, which the Ancients called by the Name of *Molybdæna*, is a Kind of metallick or mineral Body, in Crufts or Flakes, of the Thickness and Figure of White Lead, of a reddish Colour, easy to break, which is found in the Lead Mines. But as this *Litharge* is known to very few People, and is scarce to be met with, the *Artificial Litharge* only is used, which is improperly called Gold or Silver *Litharge*, because the Ancients, and after them the Moderns, pretend that this *Litharge* was got from the Lead that had served to purify or refine Gold and Silver; which is far from Truth, since all the *Litharge* we have now from *Poland*, *England*, or other Parts, as *Germany*, *Sweden*, and *Denmark*, is from the Lead made use of in refining Copper. Nevertheless, I do not deny but that those who refine Gold and Silver make *Litharge*; but that is not what is sold, because the Refiners melt theirs into Lead again to serve anew, and to recover the Gold or Silver that was carried off with it. Our *Litharge*, therefore, ought not to be called *Litharge* of Gold or Silver, but plainly *Litharge*. They ought also to be undeceived, who believe, according to what some Moderns have writ, that *Litharge* is the Fume of Lead evaporated in the refining of Gold and Silver, and that it is like Soot, and sticks to the Chimney: So also these should be undeceived who believe that there is any Difference in the *Litharges* from their Colours, since those are only occasioned by the Force or Violence of the Fire.

The *Dantzick Litharge* is to be preferred before the *Englisch*; so likewise that which is smallest, most calcined, and of a lively Colour, that will easily dissolve in any unctuous Liquor, in which it is usually employed. This Commodity is much used in *France*, as well by Potters to glaze their Earthen Wares, Dyers, Painters, and others, as by Apothecaries, who make it the Basis of most Part of their Plaisters and Ointments.

Lithargyrus, five *Lithargyrium*, or *Litharge*, is a Lead tinged with the Impurities of Copper, and reduced into the Form of Dross, or metallick Scum, by Calcination. This is made upon the Purification of Copper in *Poland*, *Sweden*, and *Denmark*. There are two Sorts, one called *Lythargyrium Auri*, seu *Chrystitis*, or *Litharge of Gold*; the other *Lythargyrium Argenti*, or *Litharge of Silver*. The Difference of Colours makes no Difference in the Virtue of them. There is likewise a *Litharge* made in Refining Gold or Silver by the Cupel, but it is but in small Quantities, though like the other. All the Sorts are desiccative, cooling, deterfive, and give a Consistence to several Plaisters, for they dissolve in boiling with Oil and fatty Bodies.

Of Salt, or Sugar of Lead.

The Salt, or Sugar of Lead, is made *Pomet.* of White Lead, or the true *Venetian Ceruse*, infused in distilled Vinegar, then filtrated, evaporated, and reduced into a light Mass, that is white and crystallized, of a sweet sugary Taste, yet nevertheless very disagreeable. The greatest Part of those who make Salt of Lead, do it with *Dutch Ceruse*, such as we sell, for which Reason they can sell it nothing near so cheap as that made of *Venetian Ceruse*; because, as I said before, the *Dutch* is mixed with Chalk, which will yield no Salt; some make it of Lead in Powder, *Minium*, or *Litharge*; none of which will afford so much Salt, and consequently what is made that way cannot be sold so cheap. Chuse that which is of the Taste aforesaid, white, in little Shoots, or shining Crystals, and as light as may be, which when dissolved in Plantain Water, will look like Whey; which Trial will answer two Purposes, the one to know the Goodness of the Salt of Lead, and the other that of the Plantain Water. Its Use is to cool, being given internally, or used externally. It is reckoned proper to stop the Flux of the Belly, and for sore Throats, taken from three to four Grains in Plantain Water. Most of those who make this Medicine make it heavy and greyish coloured, which proceeds from its not being

ing well purified, or that it was not made with good Vinegar. For to make the Salt fine and light, it ought to be purified at least four Times.

Of Balsam, or Oil of Lead.

Balsam, or Oil of Lead, is made of the Salt dissolved in Oil of Turpentine; others put Salt of Lead in a Cellar to run into a Liquor. The first Balsam or Oil ought to be preferred to the other, in that it is proper to cleanse and cicatrize Ulcers, and because it is more capable of resisting Putrefaction. Others make Oil of Lead, and Burning Spirit of Lead, which they make by filling two Parts of a Retort with Salt of Lead, and by the Means of Fire, drawing thence a Spirit that burns like Brandy. But this Oil is not so strong as that made with Oil of Turpentine, it serves to cleanse the Eyes, especially of Horses and other Beasts. Spirit of Lead is an excellent Remedy to resist the Putrefaction of Humours.

Of Magistery of Lead.

Magistery of Lead is made of good Salt of Lead dissolved in distilled Vinegar mixed with common Water; and by the Assistance of Oil of Tartar *per Deliquium*, precipitated into a white Powder, which after it is washed and dried, is very useful to cure Tetters and Ringworms, being mixed with Pomatum. The Vinegar and Water impregnated with the Salt before the Precipitation, if put into Water, make also a Sort of Virgins Milk, that is good to allay Inflammations, and cure Pimples in the Face.

Of Vinegar of Lead.

The *Vinegar of Lead* is a distilled Vinegar, wherein have been digested Ceruse and other Preparations of Lead. It is made use of to cure Tetters, or being well incorporated with Oil of Roses, to make a kind of Ointment, called *Butter of Lead*.

[*Lead* is got from different Ores, some mixed with a black, yellow, or ash-coloured Earth, some full of Spangles, others of a red or white rocky Stone, in which the shining *Lead* is seen in square Cheques, and in others of white, red, or green Spars. *Lead Ore* almost always contains some small Quantity of Silver. There are *Lead Mines* in *Spain, Italy, Germany, and France*; but the richest in *Europe* are in *England*, where they separate the Metal from the Ore by stratifying it with Charcoal, which, when lighted, melts the Metal, which immediately runs

out. The specifick Gravity of *Lead* is to that of Gold as three to five. Exposed to the Focus of a Burning-glass, it melts, emits copious Fumes, and then turns to an ash-coloured Calx, which soon turns yellow, then red, and soon afterwards melts into a Saffron-coloured, very fluid Liquor, which afterwards soon vanishes in Smoak; but if it be removed before it evaporates, it hardens into a red or yellowish Mass like Orpiment, consisting of thin *Laminae* pellucid like Talc. If this be put in the Focus again on a Piece of Charcoal, it recovers the Form of *Lead*, but if a bit of pure *Lead* be put on a Charcoal in the Focus, it melts, and is dissipated in Smoak, no Glass remaining. *Lead* therefore is composed of a vitrifiable Earth of the talcous Kind, and a sulphureous Principle, not much in Quantity, nor intimately mixed with it. It never contracts Rust, and is soluble in Acids or Oily Substances. In Calcination it gains in Weight, so that an hundred Pounds of *Lead* will yield an hundred and ten Pounds of *Minium*, but if that be again reduced to *Lead*, it will not weigh near an hundred.

Minium, Masticot, and the Calx of *Lead*, are prepared by the same Operation, only differing in degree: To make them, melt *Lead* in an unglazed earthen Vessel over a Charcoal Fire, it will after some time turn to a greyish Powder; this is the Calx of *Lead*; continue the Fire, and this Powder soon afterwards becomes yellow, then it is *Masticot*; calcine this in a very strong Fire, and it becomes red, and is then *Minium*, or red *Lead*. And this *Minium* is better and purer than that made at the Mines of the unpurified Ore.

The *Molybdæna*, or *Plumbago*, is a Substance of the Litharge Kind, sticking to the Furnaces where Silver and Gold are purified by *Lead*; the Upper Part of it is like the common Litharge; the Lower, of an ashy Substance; and the Middle, a Mixture of both the others. Its Virtues are the same with those of the Litharge, but it is seldom kept in the Shops.

Black *Lead* is the *Nigrica Fabrilis*, *Charlt. Foss.* 2. *Massa Nigra ad Pnigitem referenda*, *Worm.* 5. It is rather an Earth than a Metal: It is found in Pieces of various Shape and Bigness. The best Kind of it is that found in *England*, about *Keswick* in *Cumberland*: The *West-Indian* also is fine. The *Spanish* is the next to this, but is more brittle: That of the *East-Indies* is the worst of all. Beside its great Use to Artificers, it is in Medicine drying, cooling, and repellant.

The Preparations of *Lead* are very great Medicines, but those intended for internal Use must not be meddled with, but by those who have Judgment.]

Of Natural or Mineral Zinck.

It is not with *Zinck* as with Tin-glass; forasmuch as it is not only probable, but certain, that there is a *Natural Zinck* which the Germans call *Beauter*, and the Flemings, *Speauter*, we *Spelter*. The *Mineral Zinck*, is found in great Quantities in the Mines of *Gosselar* in *Saxony*; it is at present very scarce in *France*, for which Reason it is much enquired for by some People. This Metal appears to be a kind of Lead Ore, except that it is harder, whiter, and more brilliant. Some People have assured me, that the *Zinck* we sell in great square Cakes is *Mineral Zinck*, that after it has been fined, is thrown into Moulds of the Figure we have it; which I can easily believe, having found it impossible to make it of Lead, Arsenick, Tartar, and Salt-petre, as Mr. *Charas* has directed. *Zinck*, which some improperly call the Female Antimony, ought to be white, in fine Flakes, the least sharp, and the most difficult to break that can be: For the more it endures the Fire, and the finer and larger the Flakes are, the more it is valued by the Workmen that use it, especially the Founders.

The *Zinck* at this Time is much in Use, for the Pewterers have found it more proper to cleanse their Pewter, than Pin-Dust and Resin. It is wrong to believe that *Zinck* is mixt with Pewter to encrease its Weight; for unto a Fount of five or six hundred Pounds of it, they put but one Pound of *Zinck*; and which is wonderful, the *Zinck* has the Quality of purifying and whitening

the Pewter, and acting upon it as Lead does upon Gold, Silver, or Copper. This *Zinck* is used to give Copper the Colour of Gold, especially when mixed with Turmeric; and works upon Copper as Arsenick does, that turns it of a Silver Colour; or the *Lapis Calaminaris*, that makes it yellowish; or, lastly, as *Hungarian Vitriol*, that turns Iron into a Copper Colour, as hath been observed in the *Philosophical Transactions* of the Royal Society at London.

[*Zinck*, called *Zinchum*, *Zinethum*, and *Marcasita Pallida*, by *Schroder*, is a metallick, sulphureous, heavy Substance, resembling Lead in Colour, fusible and ductile to a certain Degree, very hard to break, inflammable, and volatile. It seems to have been quite unknown to the Antients; and even the Moderns knew very little of its Nature and Origin, till Mr. *Stahl* explained it, in his *Metalurgia*. It is extracted from the *Lapis Calaminaris*, and from the Lead Ore of the Mines of *Gosselar*, which Ore is very hard to melt, though it appears rich and shining. Three Substances are separated from it, Lead, *Zinck*, and a kind of *Cadmia Fornacea*, which, melted with Copper, makes a Bath Metal, or Prince's Metal, so called from Prince *Rupert*, who is said to have invented it. But the finest Metal of this Kind is made of *Zinck* and Copper melted together. In the melting this *Gosselar* Ore, the Lead remains at the Bottom of the Furnace, and the *Zinck* and *Cadmia* stick to the Sides. The *Cadmia* is to be long exposed to the Air before it is fit for Use; and the *Zinck* is purified by careful Meltings, and cast into Moulds.]



B O O K III.

O F M I N E R A L S.

P R E F A C E.

By Mineral, in its general Signification, is understood, whatsoever Substances have any Relation to Mines, or are increased in, or have passed through them. A Mineral is defined by some in a stricter Sense to be, a fixed and solid Body, produced by Exhalations and Vapours, inclosed in the Bowels of the Earth, as Meteors are formed in the Regions of the Air; and others will have it to be a tender Substance, produced in the Earth by Coagulation, and increased by the external Addition of sensible Particles, and which oftentimes is the Matter that in Process of Time commences Metal; I shall comprehend, under the Name of Mineral, every Thing that is of a metallick Nature, and which differs only from Metals, in not being malleable as Antimony, or capable of Fusion, as the Loadstone, &c. and shall begin with Antimony, which comes nearest the Nature of Metals, and differs from them only in not being ductile.

1. Of Antimony.

MR. Furetiere says, *Antimony* is a Mineral that comes very near the Nature of Metals; and some are of Opinion it contains all the Principles of them, as it is found near all Sorts of metallick Mines, more especially near those of Silver and Lead; that it contains a double Mineral Sulphur, the one Metallick, approaching the Purity and Colour of Gold, the other earthy and combustible, not unlike common Sulphur; a fuliginous, footy, ill-digested Mercury, partaking of the Nature of Lead; and somewhat of a terrene fixt Salt. The same Author observes also, that the Use of Antimony, unless in the Composition of Paints, was wholly unknown till about the twelfth Age; but then a certain Monk, *Basilus Valentine* by Name, published a Book, intitled, *Currus Antimonii Triumphalis*, wherein he undertakes to affirm, that it is a Remedy against all Sorts of Diseases. Three hundred Years after, *Paracelsus* brought it into Vogue; but then in the Year 1566 the Use of it was condemned by Act of Parliament; and one *Besnier*, a Physician, in 1609, transgressing it, was excluded the Faculty. In the Year 1637 *Antimony* was again received by publick Authority amongst the Number of purging Remedies; and in 1650 the Act made in 1566

was repealed. Anno 1637 the Faculty caused it to be inserted among the purging Medicines in their *Antidotarium*, printed that Year, herein following the Opinion of *Matthiolus*; and, in short, on the 29th of *March*, 1668, it had the Sanction of publick Authority, by which Graduates had a Liberty of making use of it, but with a Prohibition to all others, unless by their Advice. It acquired the Name of *Antimony*, according to the Opinion of some, from a *German* Monk, the aforesaid *Valentine*, who, in his Search after the Philosophers Stone, was wont to make much Use of it for the more ready fluxing his Metals; and throwing a Parcel of it to some Swine, he observed that they had eaten it, and were thereby purged very violently, but afterwards grew the fatter upon it; which made him harbour an Opinion, that the same sort of Cathartick, exhibited to those of his own Fraternity, might do them much Service; but his Experiment succeeded so ill, that every one who took it died. This therefore was the Reason of this Mineral being called *Antimony*, as being destructive of the Monks.

Of Natural or Mineral Antimony.

Antimony is taken from the Mine in Masses of different Bigness, resembling Lead Ore, but with this Difference, that is both lighter and harder.

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And by Reason of this Similitude, some call it Black Lead, or Marcasite of Lead; others, the Wolf or *Saturn* of the Philosophers, because it devours and consumes all Metals whatever, Gold only excepted. It is also called *Proteus*, from the Diversity of Colours it assumes by means of the Fire; but its more ordinary Appellation is *Mineral Antimony*, and it is called by the more understanding, *Crude Antimony*, as never having sustained the Fire.

Heretofore *Hungary* was the only Place for Mines of *Antimony*, but now we have none from thence since the Discovery of those in *France*. The best and finest *Antimony* is that of the Mines of *Poitou* and *Bretagne*.

Mineral Antimony is sometimes met with pure, and sometimes loaded with a Sort of Stone, which the Mineralists call *Spar*. There is some full of *Striæ*, like so many Needles; and some in a Cake of a greyish Black. This is of very little use in Medicine, unless it be purified by melting, as will be seen hereafter. The Chymists use it indeed for their particular Preparations.

The purest *Mineral Antimony* is to be chosen, such as is as free as possible from all Sorts of Stone or *Spar*. It matters not from whence it comes, provided it be good; though there are those that pretend the *Antimony* of *Auvergne* to abound most with Sulphur.

Some Gentlemen of the Retinue of the Ambassadors of *Siam* have brought home considerable Quantities of a *Mineral Antimony*, but no Experiments have yet been made of it. This *Antimony* is white, and full of small Needles; and as far as I can judge, altogether proper for the same Purposes as the *Mineral Antimony* of *France*. As for that of *Hungary*, I can say nothing of it, having never seen any of it.

Of cast or melted Antimony.

Melted *Antimony* is what we improperly call *Crude Antimony*, because it has undergone the Fire to reduce it into Cakes and Needles, after the Manner as we see: It is brought from the Places beforementioned. To melt *Mineral Antimony*, the Mineralists take two earthen Pots, one whereof they fill with the Mineral in Powder, the other they place empty in the Midst of a strong Fire, laying a Sort of an Iron Skimmer upon it, upon which they put the Pot of Powder turned upside down; then encompassing both the Pots with Fire, the *Antimony* will melt, and pass through the Hole of the Iron Plate, and fall into the empty Pot underneath, and form itself into a Cake, as it is sent to us.

The Iron Plate with Holes, put between the two Pots, serves to keep back the Stone or *Spar* that is found commonly with the *Mineral Antimony*. When the *Antimony* is melted, they take the Pot off the Fire, and when cold, break it, and take out the *Antimony*, which then may be conveniently sent whither they please.

Formerly there was to be met with in *France* the *Hungarian Antimony* in Cakes or Loaves of three or four Pounds Weight, interwoven with small Needles running a-cross each other, of a golden yellowish Colour, and at Bottom white, inclining towards that of Silver. This *Antimony* was found in the Mines of the Mountains belonging to *Presburg*, the Capital of the *Lower Hungary*, where it was melted, and made into the Figure we had it in: But this is now so scarce, that it is next to an Impossibility to find any of it. Those who have worked upon this Sort of *Antimony*, have assured me, that it was much fitter to yield whatever is to be obtained from *Antimony* than that of *France*; and withal, that from every Pound of it they could obtain two Ounces of Quicksilver, better than that of *Spain*.

In *France* we have several Sorts of *Antimony*, which differ only according as they are better or worse purified and melted. And the next best to that of *Hungary* is what we have brought from *Saumur* in *Anjou*, whither it is sent purified from *Poitou*.

The *Antimony* of *Poitou* ought be in fine beautiful Needles, long, large, white, sparkling, light, and easily broken, and with as little half-melted *Antimony* as may be, which resembles the Drofs of Iron, which is commonly found at the Top of the Cakes in *Scoria*, and is called the Top of *Antimony*. This Defect, however, is seldom found in the *Antimony* of *Poitou*, by Reason that the People there are well versed in refining or melting it: And this is the Sort of *Antimony* that should be used in all the following Operations, because it abounds less with Sulphur, and affords more of the *Regulus*. We have also had, for some Time past, an *Antimony* from *Bretagne*, in small Needles, very pure, and perfectly fit for the same Purposes as that of *Poitou*. A third Sort is that we have from *Auvergne*, which, in one word, is good for nothing, being very hard, full of Drofs, and in small Needles, of a tawny Blue, which makes it evident that it is not half purified, nor divested of its fetid and malign Sulphur, which gives abundance of Trouble and Difficulty to those who work upon it.

Besides the great Number of chymical Medicines which are made of, or drawn from *Antimony*, abundance of Artificers use it to promote the melting of Metals, and to make the *Regulus*, especially

especially in *England*, whither we send a great deal to put in their Pewter, to make it the harder, whiter, and more founding. But I observe, nevertheless, that of late Years the *English* do not make so much use of it, because instead of the *Regulus* of *Antimony*, they use *Bismuth* now. The Letter-Founders for Printing use *Antimony*, to render their Lead the more durable and hard. *Antimony*, powdered, and boiled in a Ptisan with *Sarsaparilla*, *Guaia-cum*, &c. is a certain Cure for the secret Disease. And how much soever this Drug has been condemned and out of use in Times past, it is altogether as much in Vogue now. When you make use of it, break it in small Pieces, or reduce it into a gross Powder, and put it into a Linen Rag, to be boiled with other Things. Some give the Powder instead of the Liver of *Antimony* to their Horses, and say it has the same Effect.

I shall not lose Time here to enter into a Disquisition, whether there be Male and Female *Antimony*, as many Authors affirm, as also that the Male is the coarser, more sandy, scaely, and light, and consequently less efficacious than the Female, which is more ponderous, bright-coloured, and more brittle; for I have dealt a great deal in *Antimony*, and never knew any other Difference but what arose from its Purification. When it is good, it may serve alike to all Purposes; so that I do not see how there can be two Sorts of it.

Antimonium, sive Stibium, or Anti-Lemery. mony, is a Mineral approaching very near to a Metal. It is heavy, shining, and in Crystals, shooting like Needles, of a blackish Colour: It is found near the Mines of Metals in several Parts of *Europe*; as *Hungary*, *Transylvania*, *Britany*, *Poitou*, and *Auvergne*. They get it in Pieces bigger or less, full of little hard Stones or Pebbles, which the Workmen call *Gangue*. They take the clearest, or that which has the least of the *Gangue* in it when they make use of it; for several prefer the Mineral Antimony before that which is cast and purified.

To purify or refine *Antimony*, they melt it over the Fire in Pots or Crucibles, in order to separate the *Gangue* or Dross; which cooling, they cast it into Cakes, as it appears when brought to us: this we usually, though improperly, call *Crude Antimony*, notwithstanding it has past the Fire. *Hungarian Antimony* was formerly brought into *France* in little Cakes, full of small Shoots like Needles, sticking interchangeably one with the other, shining and inclinable to white, like Silver Ore. But since this Mineral has been discovered in *France*, we have none comes from *Hungary*, whence it is become very scarce. The *Antimony* we ordinarily use, is brought from *Poitou*, which you ought

to chuse neat, in fine, long, brilliant Shoots, easy to break. It is naturally composed of a great deal of Sulphur, like common Sulphur, and of a kind of a *Regulus* like a Metal.

Of the *Regulus* of Antimony.

The ordinary or common *Regulus* of *Antimony*, without Iron, is made of Antimony, Salt-petre, and Tartar, melted together, and cast into a small Mortar greased, and so by knocking the Sides of it with a Hammer, the *Regulus* is made to fall to the Bottom; which, if it be good, ought to be white, in beautiful Scales, and like *Bismuth*. If the *Regulus* should not prove good at the first Operation, it may be melted and purified again with a little Salt-petre. The oftener it is melted, the more will it decrease, but the better will it also be.

Of this *Regulus* are made the Cups and Pills, and other chymical Operations, as shall be seen hereafter. It is a strong Emetick and Cathartick, taken from four Grains to six.

Of *Regulus* of Antimony with Mars or Iron.

The *Regulus* of *Antimony* with *Mars*, is made of *Antimony*, Salt-petre, and Points of Horse-nails, or small Nails melted together; which by means of the Fire, and proceeding after the Manner as in the preceding Operation, is reduced into a *Regulus*.

This *Regulus*, if good, is much like the other, but withal ought to have a Sort of Star upon the Top. I shall not think it worth my while to recount the many fabulous Stories of the Antients concerning this Star, and the Cause of it, but shall only take Notice, that it appears finer or worse, according to the Degree of Fire the *Regulus* has undergone.

Of this *Regulus* are made the Cups, &c. which give a purging or emetick Quality to Wine that is let to stand in them some time; but you ought to be cautioned to throw away the three or four first Wines you make with the Cups, lest they should produce some ill Accident.

Whereas most People who have Occasion for the Goblets or Cups of the *Regulus*, find difficulty to come by them, let them apply to a Founder, and they may have what Sorts and Sizes they will, at a cheap Rate, without troubling themselves with Moulds, as several have done to their Labour and Cost, who have at last been obliged to give over the Attempt, not being able to make one Cup without a Hole, or some other Defect. You may

also get these same Founders to make you the perpetual Pills, or you may easily make them yourself with a Musket-ball Mould.

The Pills serve for those that have the Twisting of the Guts, or *Miserere mei*, so called. When they are returned from out of the Body, it is but washing and cleaning them again, and they will serve as oft as you please; which gives them the Name of Perpetual. They may also be infused, as well as the *Regulus*, in Wine, cold, for the Space of twelve Hours; which is afterwards a good Medicine for strong Constitutions.

Of Glass of Antimony.

The Glass of *Antimony*, is an *Antimony* separated from its Sulphurs, which are a deadly Poison; and for that Reason ought the Operation to be performed in a Chimney, to avoid the Exhalations: It is afterwards to be melted in a Crucible, and cast upon a hot Marble, to make in the Manner we see it, and as it comes to us from *Holland*.

It is an Operation I cannot advise any one to undertake, not only upon Account of the great Difficulty and Hazard attending it, but also because we cannot make it turn to that Advantage as the *Dutch* do.

Chuse the Glass of *Antimony* flat, of a bright Red, and transparent, having as few small, thick, black, and grey Pieces in it as possible. I am told the *Hollanders* mix half broken Glass in melting it, to discharge its black Colour the better, and to make it so fine coloured as we see it; but the Truth of the Fact I know not. Instead of throwing it upon Marble, one may put it in a Founder's Mould, and so make Goblets or Cups of it; but this is a Work only for the Curious, there being no Demand for them.

This Glass of *Antimony* serves for a Vomit, taken from two to six Grains. Apothecaries make the emetick Wine with it.

Of the Liver of Antimony.

The Liver of *Antimony*, improperly called *Crocus Metallorum*, is made of *Antimony* and common Salt-petre, mixed and incorporated well together, and by means of lighted Charcoal reduced into a Stone, after the Manner as we have it.

This Liver of *Antimony* ought to be chosen in fine shining Pieces, smooth, brittle, and when bruised or pulverized, of a reddish Saffron Colour, which is the Reason of its being called the *Crocus* or Saffron of Metals; but in Pieces it ought to be Liver-coloured, from whence also comes the Name of *Hepar*, or Liver of *Antimony*.

This Liver is a Sort of *Catholicon* for Horses; more especially to purge and put them in Case, if taken from one Ounce to two in wet Bran, as Mr. *Soylefel* directs, in the Book called *The Compleat Farrier*: It is of some Use in Medicine, but so little, it is hardly worth speaking of; but on the contrary it is much used for Horses, as well under the Names above, as under that of the Imperial Powder.

This Operation, which seems the easiest in the World, is notwithstanding very difficult to be performed with Success, more especially if one has not good *Antimony* and good Salt-petre, or if it be filled with Salt, which but too frequently happens: Those that undertake this Operation, must dry the Salt-petre, and make choice of the *Antimony* of *Poitou*, not of that of *Auvergne*, as well because it is very full of Sulphur, as because it is not so well cleansed as the former; and after they been exposed some Time, mixed together, to the open Air, put a sufficient Quantity into a Mortar, or Iron Pot, placed in a Chimney; and upon Application of the Fire, a great Noise, which the Chymists call a *Detonation*, will happen; and when that is over, and the Vessel cold, the Matter must be separated from its Dross or Scum, which is white, and the Bottom will be a Stone, such as I have described. Note, You had not best make use of a Bell Metal Mortar, for fear of breaking, which sometimes happens; or be apprehensive of Fire. For, on the contrary, this Operation is the best Thing imaginable for sweeping a Chimney; but observe to put a Cloth before the Chimney, and to get far enough off for fear of the Vapours, and that you do not perform it in any publick Place. It is an Operation of a very capricious and uncertain Nature; for I have seen a great Quantity of Salt-petre and *Antimony* mixed and prepared together, that has made a very fine Composition: And again, when one has proceeded after the same Manner, in all Particulars, the Result has been less beautiful, and sometimes it has altogether miscarried. Those therefore that have Occasion for it in Powder, must take Care that it be of a fine Red, and not the Powder of such as sticks to the Tops or Sides of the Vessel, which is in small, thin, brown Scales; or such as has been spoilt, which is often powdered notwithstanding, and so sold, and this is the Reason some sell it so much cheaper than others.

I have observed, that the true Crude *Antimony*, or that immediately from the Mine, without having been melted, makes the *Crocus Metallorum* much better than the common Kind.

Those that would have *Crocus Metallorum*, fit to be taken inwardly, must make it with equal Parts

Parts of *Antimony*, and refined Salt-petre, and then reduce it to a subtil Powder, and wash it many Times in warm Water, as well to free it from any remaining Salt-petre, as to make it a little more emetick. The more emetick you would have it, the more Salt-petre must be used; but it considerably diminishes the Quantity, and makes it a great deal the dearer; though this ought to be no Consideration, since, in small Quantities as it is usually demanded, it is sold at such a Rate, that it amply rewards the Labour and Expence.

One may give what Colour one pleases to the Imperial Powder, or *Liver* of *Antimony*, according to the Preparation, or according to the Salt-petre that is made use of; which if it be of the ordinary Sort, will make it a little darker, or upon the *Liver* Colour, more than if it was of the best and finest Salt-petre; and if you add decrepitated Salt, that is, such as has been dried and half calcined, till it has done Crackling, it will be a fine Red, inclining to that of Opal, and therefore it has obtained the Name of *Magnesia Opalina*, or the Ruby of *Antimony*.

Some make use of the white Dross, as well alone, as to draw from it a Salt, or fixed Salt-petre with Water, which is a very good Medicine for Horses; *Crocus Metallorum*, both washed and unwashed, is used in making the emetick Wine, which is done by putting the *Crocus*, or *Liver* of *Antimony*, in White Wine, and infusing of it for twenty four Hours.

Of Diaphoretick Antimony.

Antimony Diaphoretick, or the *Calx* of *Antimony*, is the *Antimony* of *Poison*, and finest Salt-petre incorporated together, made into a Powder by the Means of Fire and warm Water; which, before it is quite dry, is formed into small Cakes, and so dried and kept for Use. This Medicine is sometimes used in malign Fevers, wherefore some prescribe it in the Plague, and other contagious Diseases, it being a Sudorifick, and an Expeller of the *Virus*; though there are others very dissident of its Qualities, supposing it to have no manner of Virtue, but to be only a Sort of Chalk; which I will not pretend to judge of, but leave it to the Physicians to do it. One must be careful that other Things are not substituted for it, as *Cerafe*, and the like, which ought to be avoided, and may make one careful to buy it only of faithful honest Men; for I know no certain Proof of it, unless it be that genuine *Diaphoretick Antimony* ought to be extremely white, soft, brittle, and wholly void of all Taste or Smell, being perfectly insipid. Some ingenious Men have assured me, that the Quality

of this Medicine is quite altered by keeping: For whereas, when newly made, it is Diaphoretick, it becomes Emetick when old; but this is what I have not experienced; but be it how it will, the new ought always to be preferred.

Two Sorts of Salt may be drawn from Lotions made of it; but considering the small Quantity that is to be obtained, I cannot advise any one to trouble himself about it.

Of the Flowers of Antimony.

The *Flowers* of *Antimony* are made in Pots put upon one another, called *Aludels*, being a Vapour raised from *Antimony* by the Force of Fire, and found in the Pots in white Powder, which may be gathered with a Feather. *Note*, If you make use of an earthen Retort instead of *Aludels*, you will have the Flowers red.

The *Flowers* of *Antimony* are a powerful Vomit, good against the Epilepsy and intermitting Fevers, the Dose is from two to six Grains; and of the red, being more emetick, from two to four, taken with any Sort of Conserve, or in Broth. And I cannot but observe, by the bye, that a Man ought not to deal in chymical Medicines, without Advice of a faithful and experienced Physician; Empiricks killing with them more than the Sword. How effectual soever a chymical Preparation may be, aptly and duly taken, it may be altogether as pernicious unseasonably prescribed.

Of the Butter and Cinnabar of Antimony.

The *Butter* and *Cinnabar* of *Antimony* arise from the same Matter, the Degrees of Fire only making the Difference: The Matter is a Mixture of *Antimony* and corrosive Sublimate put into a Retort. That which comes over first is a transparent Oil, next an Oil as thick as Wax, which being well wrought, is like white Sugar-candy; and the third Matter produced by the Violence and Force of the Fire, is a reddish Substance in small Needles, pretty much resembling native *Cinnabar*, from whence it has its Name.

This *Butter* of *Antimony* is a strong Caustick, but its principal Use is to make the Angelick Powder, as will be seen hereafter; the *Cinnabar* is sudorifick, wherefore it is made use of sometimes in the Small Pox, from six to fifteen Grains.

The best *Butter* of *Antimony* is very white, and perfectly like to white Sugar-candy; it ought to be as dry as possible, and for that Reason should be kept in a Bottle well stopp'd.

The *Cinnabar* ought to be chosen in little Pieces, red, and as full as possible of those *Striae*,

or little Needles; that which is blackish is to be rejected.

not being at all fat. One may also draw another Liquor from Antimony, with Sugar-candy.

Of the Powder of Algarot, or Mercurius Vitæ.

The *Powder of Algarot*, or the *Emetick* or *Angelick Powder*, so called, is a white Powder made with Butter of Antimony dissolved and thrown into warm Water, and several Times washed, and then dried, and so kept in a Glass Vial for Use.

This Powder is a very strong Purge both upwards and downwards; the Dose from two to eight Grains, in Broth, or any other Liquor. This Powder ought to be very white, and made with the Icy Oil or Butter of Antimony; which is made of the *Regulus*, as we shall see hereafter; for when the *Emetick Powder* is made with the Butter which was made of *Crude Antimony*, it is by no means so white as when with that which was made of the *Regulus*.

Of Bezoar Mineral.

Bezoar Mineral is made of Butter of Antimony, prepared with Spirit of Nitre, and reduced into a white Powder, to which are attributed the same Virtues as to the Diaphoretick Antimony, and which therefore is by many used for it; but this we ought be aware of; its Dose is from six to twenty Grains.

Of the Icy Oil of Antimony.

The *Icy Oil of Antimony* is made of the *Regulus* of *Antimony*, and Sublimate corrosive; which, by means of the Fire, are reduced into an Oil, of the Consistence of that we spoke of before. When the Oil is come over, if you encrease the Fire, and take away the Recipient, and put another in its Place with cold Water in it, you will have a very good and beautiful running Mercury.

This Oil is very corrosive, and serves to consume fungous Flesh; it is of this Oil you ought to make the Powder of *Algarot* and *Bezoar Mineral*.

Of the Caustick Oil of Antimony.

The *Corrosive Oil of Antimony* is made with Powder of Antimony, Spirit of Salt, and Corrosive Oil of Vitriol; out of all which, by the means of Fire, is drawn a whitish Liquor, to be kept for Occasion; it is of use in carious Bones, being a strong Escharotick; also for Gangrenes, and to deterge old Ulcers.

This Liquor is not, properly speaking, an Oil,

Of the Tincture of Antimony.

The *Tincture of Antimony* is made of Salt of Tartar and Antimony, melted together; from which, with Spirit of Wine, is drawn a red *Tincture*, esteemed a very good Antiscorbutick; as also to be good against hysteric Vapours in Women, the scorbutick Itch, and many other Diseases; Dose from four to twenty Drops.

Of the Magistery and Precipitate of Antimony.

This *Precipitate* is made of a very fine Powder of *Antimony* and *Aqua regia* mixed together, and afterwards thrown into an earthen Pan of Water; the Powder found at the Bottom is to be dulcified by washing, and is properly the Sulphur of *Antimony*, being inflammable, like common Sulphur: Its Use is in Apopleckick and Paralytick Cases; Dose from two to twelve Grains in some convenient Vehicle. Besides this Sulphur of Antimony, there is moreover another called the *Golden Sulphur of Antimony*, which is made of the *Scoria*, or Dross of the common *Regulus of Antimony*, without *Mars*; from which, being boiled in Water, filtrated and precipitated with Vinegar, you will have a red Powder, which, when dried, serves to provoke to vomiting; the Dose whereof is from four to six Grains in Broth or Pills. Let it not seem strange that I enlarge not more upon the Chymical Processes, since they are not the Druggist's Business; and Messieurs Charas, Glacer, and Limery, have so amply treated of them already.

[*Antimony* is the *σίμπος* of *Dioscorides*; the *τετρακάλον* of *Hippocrates*; the *Lapis Spumæ candidæ nitentisque non tamen translucentis* of *Pliny*; and the *Ailmad* or *Alamad* of the *Arabians*. *Antimonium*, *Charlt. Foss. 49. Worm. 125. Stibium*, *Fabr. 27*. It is of different Kinds; some is dug up with the Appearance of polished Iron or Lead, but brittle and mixed with white crystalline Stones; some is composed of fine shining Lines like Needles, sometimes placed in regular Ranks, sometimes without any Order, and this is what is called *Male Antimony*; some is disposed in thin broad Plates, or *Lamineæ*, called *Female Antimony*; some is a Congeries of small Lead-coloured Rods; this is got from a tender white Stone, and easily melting in the Fire like Sulphur, which enters its Composition in great Quantities. *Antimony*, of this Kind, is found in several Parts of *Italy*; some is marked with Saffron-coloured, or reddish Spots, as the *Hungarian*

garian Antimony, which is mightily esteemed by the Chymists. *Antimony* is thus frequently found in a particular Ore, but often also it is mixed with other Metals, and hence it has its Name from *ἀντὶ μόνον*, an Enemy to being alone. Ores of *Antimony* are found in many Countries; the Glebes are dug out of the Earth, mixed with a stony Matter.

Antimony, when made into a *Regulus*, and calcined in the Sun, may be separated from almost all its Sulphur, and turn to an Ash-coloured true vitrifiable Calx, which melted by a strong Fire, becomes a Hyacinth-coloured Glass; and if any sulphureous Substance be added to this Glass while in Infusion, it presently recovers its *Reguline* Form and Splendor. *Antimony* contains so much Sulphur, that an acid Liquor may be extracted from it nothing different from Spirit of Sulphur. From these, and many other Observations, it is evident, that *Antimony* consists of a sulphureous Acid, of a bituminous, inflammable Part, and of a vitrifiable, metallick Earth. The *Regulus* is dissolved by *Aqua regia*, but is only calcined by the other Dissolvents of Metals, *Antimony* dissolves and destroys all other Metals, except Gold, when melted with them, but melted with that, it consumes all the other Metals which were mixed with it, and the Gold comes out brighter and finer than before.

What our Author means by its being used as a Fucus or Cosmetick, is, that among the Antients it was used to dye the Eyebrows and Eyelashes black, as by Queen *Jezabel* in the Scriptures, and the Hebrew Women in general, who were reproved for it by the Prophets.

Crude Antimony may be safely taken inwardly in large Doses; but its Preparations, by means of Chymistry, are almost all of them rough, and very violent. They have been much in Esteem, but at present the *Cinnabar* is almost the only one in Use, except for Horses.

If any one is in Danger from an over Dose of any of the other Preparations, Spirit of Vitriol, or *Oleum Sulphuris per Campanam*, is a much safer and more expeditious Thing to check the Vomiting, &c. than *Opium*.]

2. Of the Load-Stone.

Pomet. THE *Load-Stone*, according to Authors, is a black Mineral Stone, and is endued with surprising Qualities; such as directing its Poles towards the North and South, attracting Iron or Steel, and communicating its Virtue to them by the Touch. It is found in almost all Sorts of Mines, more especially in those of Copper and Iron, of whose Nature it participates.

Good *Lead-Stone* is very solid, not porous nor very heavy, and of an homogeneous Substance; of the Colour of Iron, or a shining Black, and sometimes of a grey or obscure Blue, inclining to Red. The Virtue which the Load-Stone communicates to Steel, is lost when the Figure of it is altered, whether it be with a Hammer or one's Fingers, as may be seen with a straight Needle if bent, or a crooked one if straightened, after it has been touched, as Father *Grimaldi* affirms in his *Physicks*. The *Lead-Stone* that attracts Iron very forcibly, is called a generous or noble Stone. The Way of keeping it is in a dry Place, wrapped in Scarlet Cloth, or rather to preserve its Virtue, to arm it, and hang it up by its *Equator*, with a Cat-gut, that it may have its free Tendency. If it chance to fall, it loses its Strength for awhile: Its Poles are found by applying to it Pieces of a common Needle; for the two Places where the Needles remain strait, are the two Poles. It is said this Stone, taken inwardly, intoxicates and renders stupid; and that its Antidote, or Counter-Poison, is Gold or Emerald Stone. *Matthiolus* tells us, that red Bronze Metal, melted with some of this Stone, becomes as white as Silver, after the same Manner as Copper does of a golden Colour, with *Lapis Calaminaris*. *Pliny* says, *Dinocrates* the *Alexandrian* had begun to vault the Temple of *Alsinoe* with Load-Stone, in order to have his own Statue, which was made all of Iron, suspended in the Air. The same Thing has been affirmed of *Mahomet's* Temple, but these Accounts are altogether fabulous. It is called in *Latin*, *Magnes*, from a Shepherd named *Magnes*, that happened to discover it upon Mount *Ida*, by hitting upon it with the Iron of his Sheep-crook, according to *Nicander*. It is also called, *Lapis Lydius*, or *Heraclius*, because found in *Heraclea*, a City of *Magnesia*, which belongs to *Lydia*: In *French* it has the Name of *L'Aimant*, from its Love or Attraction of Iron. It is besides called *Lapis Herculis*, because it directs to find out the Ways, over which *Hercules*, by Antiquity was said to be the presiding Divinity: And lastly, *Sideritis*, from its Adhesion to Iron, which the *Greeks* call *Sideros*.

Beside, the forementioned Load-Stone, the Abbot *de Vallmont*, in his Treatise, tells us of another Kind, which was found upon the Top of *Chartres* Steeple, in the Year 1691, and which he had experienced to attract Iron, and to direct its Poles North and South, and to have the same Declination as the ordinary Load-Stone. It were to be wished therefore, that this Kind could be oftener met with, and it ought to be sought after amongst the Ruins of old Buildings, it certainly having very extraordinary Effects. Mr. *de Vallmont* has shewn

me one of them of a surprising Excellency and force, in attracting Iron of a great Weight. I would willingly enlarge upon this Sort of Load-Stone, were it more common, but it is very scarce; and since the King has had one presented to him, it is sought after with great Diligence, to adorn the Cabinets of the *Virtuosi*: However, I refer the Curious to Mr. *Vallemont's* aforesaid *Treatise*, who has obliged the Publick with the Description of this Load-Stone, and explained how it was formed by Nature in the aforesaid Place. There is a third Sort, but very rare also, which is what we call *White Calamite*, or the *White Load-Stone*. There is moreover, a fourth Sort, very frequent and common amongst us, being no better than a sort of Dross of Iron, but this is what is commonly sold, because the true black *Æthiopick* one, by Reason of its great Excellency, is scarce, and we cannot shift without it, especially those that go to Sea, because it always tends towards the North, and shews the Pilots where they are. The *White Magnet* also, being of great Virtue, is much sought after, but seldom met with; and in its Place there is commonly sold a worthless Sort of Marle, or white Earth, which is found sticking to the common Load-Stone; but this is easily distinguished from the true White Load-Stone, which is of a sort of greyish White, ponderous, and attracts Iron as forcibly as the black one of *Æthiopia*, which that which is sold for it will not do; besides this, its Cheapness sufficiently argues its being spurious. We therefore are obliged to content ourselves with such as are brought from divers Places, particular from *Auvergne*, which we can hardly get ten Groats a Pound for; much less could we be able to sell them at the Price of genuine Stones, which some have been glad to purchase for their Weight in Gold; but though we find much Fault with what we sell, it does not follow but there are some good, though in Truth you will scarcely meet with above ten amongst a Thousand. However, those among ours that can raise small Needles, or make the Filing of Iron move upon a Plate, by only passing the Stone along underneath, without touching it, or have Force enough to make Steel-Dust stick to them, when thrown upon them, may serve for any medicinal Use, and for the *Englaj-trum Divinum*, which is their chief Use therein.

Magnes, Lapis Heraclius, Lapis Si-Lemery. deritis, Lapis Nauticus, or the *Load-Stone*, is a compact, hard, Mineral Stone, pretty heavy, and of a black or brown Colour, or obscure blue, which is found in Iron or Copper Mines. The best is found in *India* and *Æthiopia*; but it is likewise brought from *Italy*, *Sweden*, and *Germany*: It has a great many excel-

lent Properties, both for Travellers and Artists, which are too tedious to relate. The most valuable *Magnet* is that which attracts the greatest Weight of Iron. I have seen a Load-Stone no bigger then a common Apple that would attract and suspend a Bar of Iron that weighed twenty-two Pounds. This Stone was sold for an hundred Pistoles.

They make the Load-Stone one of the Ingredients in the Composition of Plaisters appropriated to Wounds that are made with a Sword, where they think some Pieces may be left behind; for they believe that the *Load-Stone* which is in the Plaister, attracts and draws the Iron out of the Wound, though the Virtue in the *Load-Stone* there can never produce this Effect: For first of all, being powdered finely, as it ought to be, it loses all its Force of Attraction: And, secondly, being mixed in the Plaister, though its Virtue should remain, it would not have Power to act, being confined by the Viscidity of the Gums and Resins. There is a white Load-Stone, but it is very scarce; it ought to be of a greyish White, heavy, and attractive: All these Stones are astringent, and stop Blood, outwardly applied.

[The *Load-Stone* is the *Magnes, Aldr. Mus. Met. 553. Worm. 62. Charlt. Foss. 62. Lapis Magnes, Matth. 1384.* the *Ἡράκλειος λίθος* and *Ἡρακλειωτίς* of the Greeks; the *Magnetis* of *Avicenna*; and the *Calamita* of *Rhazes*. It is also called *Lapis Lydius*, but this Name ought to be avoided, because it is common to the Load-Stone, and to what we call the Touch-Stone, by which the Truth of Gold and Silver are tried: They both received this Name from their common Country; but these two Significations of the *Lapis Lydius* are to be carefully distinguished, the two Stones being very different from each other.

The *Load-Stone* is found in many Countries of *Europe*, particularly in Iron Mines; but the best are brought from *Æthiopia* and the *East-Indies*. It is undoubtedly a kind of Iron Ore; for in some Places of *Germany* they actually extract Iron from it; and when exposed to the Focus of a great Burning-glass, it manifestly discovers Iron.

It is not used inwardly in Physick; though *Galen* says it has the same Virtues as the Blood-Stone, and also some purgative Quality, for which he recommends it in Dropsies; and *Dioscorides* prescribes it to evacuate gross melancholick Humours. Externally it is drying, astringent, and consolidating, and is an Ingredient in some Plaisters.

The *White Load-Stone* is the *Magnes albus, Mont. Rex. 13. Magnes Candidus, Kentm. 14. Aldr. Met. 560* From both these we ought to distinguish the

the *Magnes* of *Theophrastus*, which was, as he says, white, and shining like Silver, not hard, but easily turned into Vessels, neither did it attract Iron. It had its Name, as the *Load-Stone*, from *Magnesia*, a Town in *Lydia*. This was, in all Probability, a kind of native Litharge, and was that kind of *Magnes* said to be poisonous; whence from confounding this with the true *Load-Stone*, that was also, in after Times, accounted a Poison.]

3. Of Natural Cadmia, or Calamine-Stone.

Pomet. *CADMI*A, Calamine-Stone, or *Lapis Calaminaris*, is a Mineral, whereof there are two Sorts, the Grey and the Red.

The first is not unlike grey Bole, only it is harder; it is found in *Germany* and *England*, near the Lead Mines, and also near *Liege*.

The second Sort is a Stone of a reddish Colour, interlaced with white, hard, heavy Veins, full of round hard Grains, of the Bigness of Pepper. These Stones are found in great Plenty in *Berry*, near *Bourge* and *Saumur*, where there are whole Quarries of them, and one may have what Quantity one will for the Digging. They may be had also in many other Places; but since those of *Berry* are as good as any, it is not worth our while to have them brought from more distant Places.

This Stone is of some Use in Medicine, as it is astringent and desiccative; it is also an Ingredient in some Galenical Compositions, for all which Uses, it ought to be prepared upon a Porphyry, and made into Cakes, with Rose-water, and is, prepared, what the Apothecaries called *Lapis Calaminaris*.

As for the first Sort, how genuine soever, it is of very small Use in Physick; its chiefest being to turn red Copper into yellow, which is called *Leton*, or *Brass*.

Cadmia, in *Arabick* *Clinia*, vel *Chili-Lemery*. *mia*, in *English* *Cady*, is a Mineral Substance, whereof there are two general Kinds, one natural, and the other artificial; the natural is metallick as *Cobalt*, or not metallick as *Lapis Calaminaris*: The artificial is a kind of *Scoria*, which is separated from the Metals in the Founders Works, as are the *Pompholyx*, *Tutty*, &c.

[*Calaminaris-Stone* is the *Cadmia Fossilis*, alias *Lapis Calaminaris*, *Worm*. 128. *Charlt. Foss.* 51. *Cadmia Fossilis*, *Aldr. Mus. Met.* 256. *Cadmia Lapis Calc. Aluf.* 460. The Name *Cadmia* has been applied to several Things; *Dioscorides* understood by it, the Recrements of Brass in the Furnace; *Galen* applied it to these, and also to another native Substance found in the Island of *Cyprus*, which he calls *λίθονος*, or stony; and *Pliny*,
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besides the factitious *Cadmia* of these Authors, mentions another by the Name of *Lapis Aërosus*, which he says was an Ore out of which Copper was made; which was, perhaps, the same with the *Cadmia Lapidosa* of *Galen*. The Dealers in Metals, and from them others, have also called by the Name of *Cadmia*, the Stone, which is the Subject of this Chapter, the *Lapis Calaminaris* used in making Copper into Brass; and the *Germans* have given the same Name to *Cobalt*: Therefore *Agricola* and the other more modern Writers distinguish three Kinds of *Cadmia*; the Metallick, the Fossil, and that of the Furnaces.

The metallick *Cadmia* is a fossil Substance, containing some Portion of Copper or Silver, or both, and is of two Kinds; the *Cyprian*, which is also found in *Asia* and *Italy*, and is a Copper Ore; and probably is what *Galen* means, though he does not mention that Copper was obtained from it; and the *German*, or *Cobalt*, a metallick Substance, from which are prepared *Arsenick*, *Zaffera*, and the *Encaustum Ceruleum*.

The fossil *Cadmia* is the *Lapis Calaminaris*, the Subject of this Chapter. It is a fossil Substance of a middle Consistence between Stone and Earth, and of different Colours, as whitish, yellowish, or reddish. These are all found in many Parts of *England*, and that of the last Colour is usually full of small ferrugineous Globules, and is found in great Quantities in *France*; the others are dug in *Germany*, near *Aix la Chapelle*. They seem to partake of Iron Ore, as most of them are attracted by the *Load-Stone*, and are the proper Ores of *Zink*. This was probably unknown to the antient *Greeks*, or at least not used in Physick, since it is not mentioned either by *Dioscorides* or *Galen*. It is now much used in drying Ointments.

The *Cadmia* of the Furnaces is the *Tutty* described already in its Place.]

4. Of the Hæmatitis, or Blood-Stone.

THE *Lapis Hæmatitis*, or *Blood-Stone*, *Pomet.* is a Mineral of a reddish Colour, hard, ponderous, with long pointed Needles, very dangerous to such as are pricked by them.

This Stone is brought us from many Places, there not being any Iron Mines wherein it is not found.

Chuse those Stones that are of the highest Colour, with fine Striae, or Needles, and as much like *Cinnabar* as may be.

This Mineral has some Use in Medicine; as it is astringent, desiccative, and good to stop Bleedings, used externally, or given inwardly in fine Powder; the Dose is from four Grains to a Drachm.
T

Drachm. Mr. Charas observes, in his *Pharmacopæia Chymia*, Page 823, that if you drive it over the *Helm*, in a Retort, with *Sal Armoniack*, you may draw Flowers of the Colour and Smell of Saffron, which are what they call the *Flores Aromatici Philosophorum*: And moreover you may make with it a chalybeate acid Spirit; and with Spirit of Wine, a Tincture and Flowers; both which have great Virtues, according to the aforementioned Author, to whom I refer you.

It is said this *Stone* has a sovereign Virtue to stop Blood, from whence it derives its Name of *Lapis Hæmatitis*, or the *Blood-Stone*.

This *Stone*, being powdered, as the *Load-Stone*, enters the Composition of some Galenick Medicines: Also those that work in Metals, or in quest of the *Philosophers Stone*, make use of it.

Goldsmiths, and those that gild, use it too, to polish their Work, whether it be upon Silver, Copper, Iron, Wood, or whatever.

There is also another Sort of *Blood-Stone* called the *Red Crayon*, used by such as design and draw Sketches: it is like that of *Spain*, with this Difference, that it does not appear so sparkling with Needles, but dull and unpolished, like Earth.

This kind is brought us from *England*, and there are two different Sorts of it; the one good, which is pretty tender, soft, and easy to saw or cut into Crayons; but the other, not worth any Thing, hard and gravelly, and will not admit of cutting.

Hæmatitis, *Lapis Sanguineus*, or the *Lemery*. *Blood-Stone*, is a hard, solid, heavy Stone, participating of Iron, disposed like Needles, of a reddish brown Colour, but becoming red as Blood, as it is reduced to Powder; they take it from the Iron Mines. The best and most esteemed is that of *Spain*, which is clear, heavy, hard, and solid, in fine Shoots, of a reddish brown Colour, with Streaks that are blackish without, and resembling Cinnabar within; it is very astringent and drying, stops Blood, and is given internally, as well as used externally, in fine Powder; the Dose from fifteen Grains to a Drachm. There is another Sort of *Blood-Stone* brought from *England*, called the *Rastard Hæmatitis*; it differs from the former in that it neither shoots into Needles, nor is so hard: Chuse such as is of a brownish red, weighty, solid, and smooth; it is astringent, and is called *Hæmatitis* from αἷμα, Blood, because being powdered, it is of the Colour of Blood, and stops Bleeding.

[*Blood-Stone* is the *Hæmatitis*, Charlt. Foss. 27. Worm. 64. *Lapis Hæmatitis*, Math. 1381. αἰματῶς of the Greeks; and the *Sedenigi*, or *Sadanigi* of the Arabians. It is an Iron Ore; and

in *Bohemia* they extract an excellent Iron from it: It is often found in Iron Mines in a distinct Ore, but there are always found near it, wherever it is, red Earth and red Stones; it is dug up in *Germany*, *Italy*, and *Spain*, but the last is the best. *Pliny* distinguishes five Kinds of it, according to the Countries it comes from, and its different Colour and Hardness; and others divide them from their outward Appearance; some are uneven and angular as those of *Spain*; some clustered on the Surface like Bunches of Grapes, and therefore called *Botryoides*, as those brought from the *Harts Forest* in *Germany*; and others are formed in various Convolutions, like the Intestines, or the outer Surface of the Brain: these are beautifully delineated by *Aldrovandus* and *Imperati*.

The *Green Blood-Stone*, or *Heliotrope*, is the *Heliotropius*, Worm. 94. *Lapis Porraceus guttatim, punctulatim, vel fibratim sanguineus*, *Heliotropium dictus*, Cup. Hat. Cath. Sup. 50. It is a very beautiful green Stone, marked with red, and is said to possess the same Virtues with the other.

What our Author, and some others, mention as another kind of *Blood-Stone*, used for Crayons, is an Earth well known in *England*, under the Name of *Red Oaker*, *Ruddle*, or *Marking-Stone*. It is the *Rubrica Fabrilis*, Calc. Mus. 134. *Rubrica*, Charlt. Foss. 2. Worm. 4. *Rubrica Fabrilis mollis*, Kentm. 8. This is sometimes brought to a paler Colour with the Addition of Chalk, then worked up into Cakes, and sold under the Name of *Bole Armenick*; and in smaller round Pieces, marked with some Impression, under that of *Terra Sigillata Rubra*. There is also another harder Kind of this, the *Rubrica Fabrilis Dura* of *Kentman*; *Rubrica Laminata* of *Charlton* and *Wormius*, which is used by the Turners, and must be wetted before it will mark.]

5. Of Spanish Emery, and the other Emeries.

EMERY of *Spain* is a Marcasite, *Pomet*. or stony Mineral, with small Veins of Gold running through it, which is found in the Gold Mines of *Pern*, and elsewhere: It is of much Account amongst those that seek the Philosophers Stone, because of the golden Veins that adorn it; and it is at this Day so valuable and scarce, that those that have any of it may sell it for its Weight in Gold; the King of *Spain* has forbidden the Exportation of it out of his Kingdom, which is the Reason it is so very scarce to be found. This *Emery* is of little or no Use in Physick, though Mr. *Demeurve* says it is of a corrosive and caustick Quality.

There are, besides this, two other Sorts of *Emery*,

Emery, one whereof is reddish, and found in Copper Mines, as well in *Sweden* as other Places, and is what some sell for *Emery* of *Spain*, but it is easily distinguishable from it, being more rough, solid, and hard, of a fine red Colour, and not veined with Gold.

The third Sort is that which is commonly used by Armourers, Cutlers, and, in short, by all those that work upon Iron or Steel, there being nothing that polishes like pounded *Emery*. It is also used in polishing Steel, Looking-glasses, several sorts of Stones, and upon a great many other Occasions in the mechanick Way.

The common *Emery* is brought to us from several Countries where there are Iron Mines, and likewise from *England*; and there are none but the *English* that trouble themselves about the powdering or grinding it in Mills which serve only for this Purpose, or to grind Stones of a like Nature; for this ordinary or common *Emery* is so hard, that whoever would pretend to powder, or beat it in a Mortar, would be apt to make Holes in the Mortar: And as this Mineral is made much use of, especially in Powder, that ought to be chosen which is in fine Powder, pure and clean; if in Stone, let it be as bright-coloured, and as free as you can from other Stones.

Emery cuts Glass as the Diamond does, but makes no Impressions upon Diamonds as it does upon other precious Stones. It is said, if melted with Lead and Iron, it encreases their Weight, and hardens and makes them become red; which I have not experimented. Some also mix *Emery* with the soft pale *Madagascar* Gold, but it must be that of the second Sort, which comes from the Copper Mines.

It is made use of also to cut and divide Marble. They affirm likewise that it becomes an impalpable Powder, if put into Brandy or Spirit of Wine, which I cannot vouch for, having never tried it; that which falls from the Lapidaries Mills, and looks no better than Mud, is by some made up into Balls, and sold to several People under the Appellation of the Putty of *Emery*.

Smyris Lapis, or *Emery*, is a kind of *Emery*. Marcasite, or very hard Stone, whereof there are three Sorts; the first and most esteemed is called *Spanish Emery*, because it is found in the Gold and Silver Mines of *Peru*, and several other Parts of *New Spain*; it is reddish, mixed with Streaks of Gold and Silver. This Kind of *Emery* is very scarce, for because of the Gold contained in it, the King of *Spain* has forbid the Transportation of it. The Second is smooth, and red, but has nothing of Gold or Silver

in it; it is found in the Copper Mines. The Third is common *Emery*, whose Colour is blackish; it is got in the Iron Mines; they powder or grind it in *England*; by certain Mills made for that Purpose, which they could not do in Mortars, because of the great Hardness of this Stone. This powdered *Emery* is used to polish or clean Arms, Knives, Looking-glasses, &c. You must chuse that which is in the finest Powder, pure and clean. All these Stones are made use of to cut and polish precious Stones, Glass, and Marble, and are of no Importance in Physick, except only that they may serve to clean the Teeth. What falls from the Lapidaries, in working with this, they dry and call Putty of *Emery*.

[*Emery* is the *Smyris* and *Smerillus* of the Shops, *Smyris*, *Worm*. 65. *Ald. Mus. Met.* 653. *Charlt. Foss.* 27. The *σμύρις* of the *Greeks*; the *Smergium* of *Serapion*; and the *Sumbagedi* of the *Arabians*. It is a ferrugineous, heavy, metallick Substance, of the Iron Ore kind. The common *Emery* is blackish, and found in many Parts of *Europe*; especially in an Island on the Coast of *Tuscany*, and in *Guernsey*, in the *British* Channel. It is recommended by *Dioscorides* and *Galen* as a Dentifrice; but it corrodes the Teeth too much, and insensibly wears them away.

The *Spanish Emery* is greatly in Esteem with the Searchers for the Philosophers Stone: they extract a Tincture from it with Spirit of Sea Salt, with which they say they can fix Mercury in an instant, and call this Substance Miraculous Precipitate, fancying they shall, by means of it, at length attain to the true Art of making Gold.]

5. Of the Magnesia.

MAGNALES, *Magnesia*, *Magne*, or *Pomet. Manganes*, is a Mineral pretty near approaching to Antimony, only it is softer, and brittle, like Free-Stone, and made up of shining Sparkles instead of Striae.

There are two Sorts of *Magnesia*, the Grey and the Black; the former is very scarce, and so not much in use, but the black is very much used, as well by Enamellers, as Potters and Glass-makers, who purify and whiten their Glass, by putting in a small Quantity of it; whereas, should they add too much, it would be of a blue or purple Colour.

We have it from many Places in *Piedmont*, where it is found in the Mines in Pieces of different Figure and Bigness; as to the Choice of it, let it be as brittle, as sparkling, but as little loaded, or other extraneous Bodies as may be.

Monsieur *Furetiere* is very much mistaken in affirming

affirming *Magnesia* to be the same Thing as *Safre* and *Perigueur*, both which I am going to treat of, and first of *Perigueur*.

[*Magnesia* is the *Sapo Vitri Murr. Pin.* 214. *Manganese*, *Schwenk. Not. in Boer. Chym.* 140. It is a fossil, metallick Substance, found in *Germany*, *Italy*, *Piedmont*, and near *Mendip Hills* in *England*; and wherever the Miners find it, they conclude there is Iron Ore near; it is used in Glass-making, and to colour earthen Vessels of a purplish Black, but is of no use in Medicine.]

7. Of *Perigueur*, or *Perigord-Stone*.

Pomet. *PERIGUEUR*, or *Perigueux*, is a Mineral, or black Stone, like black Coal, heavy, hard, and difficult to be reduced into Powder.

Enamellers and Potters make use of it. There needs no other Choice about it than to see that it be pure, and clean from Impurities; for if there be any other Mineral mixed among it, it would spoil all the Works it is employed in; therefore they that sell it to the Workmen, must take the same Care as they do in Lead Ore.

The *Perigueur* which we sell at *Paris* is brought us from *Dauphiny* and *England*.

Lapis Petracorius, *Perigord*, or *Perigieux*, is a kind of *Marcasite* or hard Stone, that is heavy and solid, black as Coal, difficult to reduce to Powder. It is met with in several Mines of *Dauphiny*, and in *England*, from whence it is brought us in Pieces of different Sizes; the Enamellers and Potters use it: You ought to chuse it pure and neat; it is detensive and astringent.

[This is the *Lapis Petracorius*, *Dal.* 34. It is a fossil Substance, seeming to contain some Particles of Iron, and used by the Earthen Ware-workers; but never heard of in Medicine.]

8. Of *Safre*, or *Zaffre*.

Pomet. *SAFRE*, or *Zafre*, is a Mineral of a bluish or Partidge-eye Colour, which the *English*, *Dutch*, and *Hamburgers*, bring us from the *East-Indies*, and especially from *Surat*.

Most of the *Safre* we have is in a grey Powder, like *Ashes*, from which it so little differs in Appearance, that we are forced to consult the Workmen, who use it, to know, by Trials, whether it is what it ought to be.

There are, however, two Sorts of *Safre*, the fine and the common; the former is in a bluish or cineritious Stone, the latter in Powder; and very often so bad, that it is hardly good for any thing, and being so very weighty must needs be mixed

with some stony Substance, the other being much lighter.

Safre is much used by *Delft Ware* and *Glass-makers*, to give a blue Colour to both Sorts of Ware: It is also with *Safre* that they colour calcined Pewter, in order to make the false Stone, which I have noted in the Chapter of *Enamels*: And lastly, with *Safre* it is that the azure Colour of Glass is produced, as is before observed, and of which is made the counterfeit *Sapphire*.

Saphre, *Safre*, *Zafre*, or *Sapphire*, is a Mineral whereof there are two Kinds; *Lemery.* one called *Fine Sapphire*, and the other common: The fine Sapphire is a pretty soft Stone, of a bluish Colour; the common Sapphire is a greyish heavy Powder; both sorts come from *India*. The fine Sapphire is used to give a blue Colour to Enamel, to Earthen Ware, and Glass; they likewise colour counterfeit Sapphires with it, whence it takes its Name.

[*Zafer* is a Preparation of *Cobalt* (to be treated of hereafter) which is thoroughly calcined, then made into a fine Powder, and mixed with three Times its Quantity of powdered Flint-Stones; then put into large Tubs, and moistened with a little Water, where, in a short Time, it becomes a solid firm Mass, and is called *Zaffra*: It is used by the Potters, Glassmen, &c. but not in Medicine.]

9. Of *Rusma*.

Pomet. *RUSMA* is a sort of Mineral, in Colour and Figure resembling the Dross of Iron, found in great Plenty in *Galatia*. This Mineral is in such Vogue amongst the *Turks* to take off Hair, that the *Grand Signior* has an Income of 30,000 Ducats per Annum arising from it. This Depilatory is very little used in *France*, but I am sure if it was better known, it would be preferred to Lime and Orpiment upon that Occasion, it being stronger and more efficacious, and the Use of it attended with no sort of Danger.

Rusma is a Mineral that is like the Dross of Iron, both in Colour and Figure; there is abundance of it in *Galatia*: It is a Depilatory very much used by the *Turks*.

[The *Rusma*, or *Reusma* of the *Turks*, has been taken, by some Authors, to be *Orpiment*; but it is much more probably the *Sery*, as I have already observed at the End of the Chapter of *Chalcitis*.]

10. Of *Orpiment*.

Pomet. *ORPIMENT*, or *Orpiment*, is a Mineral commonly found amongst Copper Mines; composed of a great Quantity of Sulphur, and

and a corrosive Salt, in Stones of a different Bigness, Colour, and Figure; some being of a golden, other of a reddish, and some of a greenish Yellow, and some almost quite red; which proceeds from the different Degrees of Heat in the Bowels of the Earth where it is formed. The Mines of Copper in which this *Orpiment* is found are never without some little Gold; and for that Reason those that worked in them do not fail to make Separation of it after the ordinary Method.

The yellow *Orpine* is found of different Colours; wherefore it is that the *Dutch* and *English* send it to us in such variety of Forms and Figures; but the best and most valuable is in thick Pieces, and in handsome bright Scales, gilt as it were with Gold, and which easily exfoliate, that is to say, which without much ado are separated and divided into thin *Laminæ*, or Scales, glistering like Gold.

A second kind of good yellow *Orpine*, is, that which is half yellow, half red; or else full of reddish Veins: That which is in small Stones, and of a greenish yellow, is utterly to be rejected, being nothing but mere Earth; as also that which is in Powder.

Orpiment is of some Use in Medicine, being an Ingredient in some Ointments and Plaisters. It is also made much use of by Persons of several Professions, especially at *Rouen*, to dye their Wood yellow, of which they make Combs, and sell them for Box. Farriers use it upon several Occasions; as also Painters, when it is ground. It is one of the greatest Poisons we have, therefore we ought to take care to whom we sell it.

It is the reddish natural *Orpiment*, which ought to be denominated the *Sandarach* of the *Greeks*, and not the following, as most Authors have written; for the red factitious *Orpine* is made of this, as I am going to make appear.

Of Red Orpine, or Ratsbane.

Red *Orpine*, which is ordinarily called red *Arsenick*, as Mr. *Morin*, a Physician of the Faculty of *Montpellier*, has assured me, is made of the yellow *Orpiment*, as it is drawn out of the Mines, by heating it in the Fire till it has acquired a red Colour; and afterwards putting it into a Crucible with Hemp-seed Oil, or Sallad Oil, or Nut Oil, evaporating the Oil; and then adding more, and proceeding after the same manner, till the *Orpiment* becomes vitrified, and fit to be cast into Moulds, and so made of the form of a Cake, and reduced to a Stone, as we see it. This Process seeming very feasible, I was willing to attempt it, but could not succeed in it; for the *Orpiment*, instead of red, became cal-

cined and white, altogether like Plaister: But though I could not do it, yet I will not say the Thing cannot be done; Mr. *Morin* being a Man of too much Honour to affirm a thing he did not certainly know to be true.

However this be, *Orpine*, or red *Arsenick*, ought to be chosen in thick heavy Pieces, and as high-coloured as possible.

Red *Orpine* is but little made use of, except when ground into a fillamot Colour by Painters.

[*Orpiment* is the *Auripigmentum luteum*, Aldr. Mus. Met. 333. *Arsenicum croceum*, *Auripigmentum*, Charlt. Foss. 49. It is the *Agamzōn* of *Galen*; *Αἰγινζόν* of *Dioscorides*; the *Naruth* of *Serapion*; and the *Zarnich asfar* of the *Arabians*. It is an *Arsenical* Juice, or, as some affirm, a kind of Gold Ore. It lies in squamous foliaceous Glebes, like the *Lapis specularis*, and is of three Kinds, yellow, reddish, and greenish; these are all three found in the Veins of Gold, Silver, and Copper Mines. *Orpiment* is soluble in Oil, and inflammable, emitting a thin Flame with a great deal of Smoak, smelling of Sulphur and Garlick, which, if collected, forms yellowish Flowers like Sulphur, and a blood-coloured Mass remains behind, by some called red *Orpiment* or *Realgar*. If the *Orpiment* be kept a long time on the Fire, the whole Mass sublimes into a beautiful red Substance like a Ruby, leaving only a little Earth behind. The first Fumes which come from this will turn Copper white and brittle. *Orpiment*, therefore, consists of the same Parts as common Sulphur, with some mineral Particles mixed among them. The common *Orpiment*, reddened by Fire, as I have already observed, is by some called red *Orpiment*; but the genuine red *Orpiment* is the *Arsenicum rubrum Sandaracha vulgo dictum*, Charlt. Foss. 13. *Sandaracha nativa*, Kentm. 18. *Arsenicum rubrum*, Risigallum, *Sandaracha Græcorum*, Mont. Ex. 13. and the *Realgar*, *Lesegall*, and *Zarnich-Achmer* of the *Arabians*. It is a Fossil of the same Nature with *Orpiment*, and seemingly only different in Colour. It is brought from *China*, cast into Figures of Pagods: It is no less dangerous than *Orpiment*; and though both of them have been recommended by old Physicians, and are at present taken inwardly in the *East-Indies*, yet nobody ought to think of giving them here: For the Wine infused in Cups of *Realgar*, which is a common Medicine there, has been attended with very fatal Consequences here; so great is the Difference in the human Body in different Climates; even the external Use of it here is not absolutely safe, and, as Chymistry has furnished us with much better Catharticks, ought to be wholly laid aside.]

II. Of natural white Arsenick.

Pomet. **W**HITE natural *Arsenick* is a Mineral, pretty much resembling the common or factitious white *Arsenick*, only it is whiter and more resplendent, and not so scaly. This Mineral, or natural white *Arsenick*, is found in Copper Mines; and when Miners meet with it, it is a certain Indication to them that Copper is near. It is found generally in the *Interstitia* between the true Spar and Clay, and sometimes it is met with in separate Pieces amongst the dry Clay. This *Arsenick* is very little known, and little used.

Of the white factitious Arsenick.

Though I have taken some pains to discover what the white *Arsenick* that we sell is, yet it has not been in my Power to inform myself; so that I am forced to rest myself contented, and to say, with others, that it is a Composition of Orpiment and common Salt sublimed together; which does not stand to Reason, since, if it were so, I do not see how the *Dutch* could possibly sell it at the Price they do. But not knowing what to determine in this Matter, I will only remark, that it ought to be chosen in thick Pieces, white within and without. Most of what we have from *Holland* is white, and rough without, and if you break it, transparent like unto Glass within, which gave occasion to the Antients to call it Crystalline *Arsenick*, which is in mighty request at this Day with some, but by others undervalued and rejected, some valuing the rough, and others the crystalline.

Arsenick is of some small Use in Physick, to perform some Operations, as shall be seen hereafter; but chiefly made use of by Dyers, and in the Country to destroy the Rats and other Vermin.

Of the Regulus of Arsenick.

Regulus of *Arsenick* is made of *Arsenick*, Potashes, and Soap, put into a Crucible, and by the Flame of a Lamp melted and cast into a great Mortar: It is much milder than the *Arsenick* itself. If the Dross of this *Regulus* is boiled in Water, and the Liquor filtrated, by throwing Vinegar into it, a yellow Powder will be precipitated, which is called the Sulphur of *Arsenick*, and acts with more Violence than the very *Arsenick* itself.

Of caustick or corrosive Arsenick.

Corrosive *Arsenick* is made of *Arsenick*, Saltpetre, and Sulphur, put into a Mortar and set on

fire, as in preparing *Crocus metallorum*. When the Noise, or Detonation is over, and the Whole is sufficiently burnt and grown cold, the Mass is to be pulverised, and put a-new into a Crucible to be calcined. If you would have this caustick *Arsenick* in Liquor, it is but placing it in a Cellar for a few Days, and it becomes an Oil *per Deliquium*.

One may draw also a Butter or corrosive Oil of *Arsenick* with Sublimate. This Oil, or Butter of *Arsenick*, is a very strong Caustick, and therefore very proper for making an *Escar*. But as all Preparations of *Arsenick* have a pernicious Quality, they are to be used with great Caution, and not without the Advice of some skilful Person.

Calcined *Arsenick* may be sublimed with Sea Salt decrepitated; and with this, as some do affirm, they counterfeit the *Venetian* Sublimate, which is what we call *Smyrna* Sublimate; but not being certain of this, I cannot avouch it for Truth, as I before hinted, when treating of Sublimate Corrosive.

Of the Arsenical Load-Stone.

The *Arsenical Magnet* is made of *Poictou* Antimony, Sulphur, and crystalline *Arsenick*, powdered together, and put into a proper Vessel that will bear the Fire, and the Whole may become one transparent Mass, such as the arsenical Magnet ought to be.

It is said this Preparation is a gentle Caustick, and performs its Office with great Ease. It is an Ingredient in the magnetick Plaister of *Angelus de Sala*, described in Treatises of *Pharmacy* by many Authors, such as M. *Charas*, &c.

Arsenicum, sive Arrenicum, or Arsenick, is a Mineral that is weighty, shining, brittle, sulphureous, and caustick, of which there are three Kinds; one yellow, one red, and one white; the first is called in *Latin*, *Auripigmentum*, or *Orpiment*; this is a yellow shining Stone, taken from the Copper Mines, in Pieces of different Shapes and Sizes. There are several Sorts, that are distinguished by their Colours; for one is of a resplendent gold Colour, the other of a paler yellow; the beatifullest and most valued is in large Pieces, of a golden shining yellow. They easily separate, by little thin Scales that glitter like Gold. The reddish yellow Orpiment receives its Colour from the subterranean Fires that calcine it: The *Orpin* and the *Realgal* both are used by the Painters, after being finely ground on a Porphyry.

The second sort of *Arsenick* is called *Sankarach Gracorum*, *Realgal*, *Reisgar*, *Refigalum*, or *Red*

Red Orpiment. Of this *Arsenick* there are two Kinds, the one natural, and the other artificial; the natural is that which is calcined in the Mine by the subterranean Fires; the artificial, which is more common, being calcined by the ordinary Fire. You ought to chuse the *Realgal* that is in largest, heaviest Pieces, shining, and of the highest Colour: It serves the Painters. This Name of *Sandaracha* is given to *red Orpine*, because of the Resemblance it has in Colour with *Minium* or *Read Lead*.

The third sort of *Arsenick* is called white *Arsenick*, or simple *Arsenick*, by way of Excellence, as being the strongest of all. This is a Mineral in large Pieces that are hard, heavy, brittle, very white, shining, or crystallized without and within. There is the natural and the artificial: The natural is found in Copper Mines, but is scarce; the artificial is made with equal Parts of *Orpiment*, and common Salt mixed and sublimed together. All the Kinds of *Arsenick* are corrosive Poisons; but the most active and dangerous is the white. It does not usually work violently till half an Hour after it is taken; because the Salts that make the Corrosion are locked up, and naturally fettered in the Sulphurs, which makes it some Time before they are at Liberty, when they produce great Pains, Inflammations in the Guts, violent Vomitings, Convulsions, Restlessness, a general Loss of Strength, and at last Death, if not prevented. The Remedies proper on this Occasion, are, melted Fat, Oil, Butter, &c. in order to sheath the Points of the caustick Salts; and to evacuate upward and downward; then Milk being taken in good Quantities, sweetens and corrects the Acrimony of the Poison.

[*Arsenick*, properly so called, is a Substance extracted from *Cobalt*, an Ore found in *Saxony* and *Bohemia*, and other Places; to be described hereafter. There are three Kinds of *Arsenick*; the white, the yellow, and the red: To make them, the *Cobalt* is put into a calcining, reverberating Furnace; when the Flame has set it on Fire, it emits a blue Flame, and a copious thick Smoak with it, which is received upon the Cieling of the Furnace; and thence conveyed into a large Funnel, made of Boards of a hundred Ells in length; some of it goes out at the End of this Funnel; but the greater Part sticks to the Inside of it, in the Form of a whitish Soot, which is taken out about once in six Months, and serves to make all the three Kinds of *Arsenick*. The white or crystalline *Arsenick* is made, by subliming this Soot in Iron Vessels, into an opake Substance, sometimes shining within like the *Encainstum Album*, and sometimes streaked with red or crystalline Veins.

The yellow *Arsenick* is made by subliming the same Soot with a tenth Part of common Sulphur; the sublimed Mass is yellow, like common Sulphur, solid, shining, not altogether opake, easily broken, but not apt to crumble into Powder. It is distinguishable from Orpiment, by not taking Fire when thrown upon burning Coals, as Orpiment readily does.

And red *Arsenick* is made of the same Soot and Sulphur, mixed with a small Quantity of a metallick Substance, called the *Spuma* of Copper. The sublimed Mass is solid, opake, and of a cinnabarine Colour.

The first of these is the common Ratsbane, or white *Arsenick*; the *Arsenicum Album*, *Ind. Med.* 15. *Arsenicum factitium Album*, *Aldr. Mus. Met.* 354. *Arsenicum Album seu Crystallinum*, *Schrod.* 3. 498. The second, or yellow *Arsenick*, the *Arsenicum factitium flavum*, *Aldr. Mus. Met.* 358. *Arsenicum citrinum seu flavum*, *Schrod.* 3. 498. And the last, or red *Arsenick*; the *Arsenicum rubrum factitium Officinarum*, *Wood. Att.* 2. P. 1. p. 50.

All these kinds of *Arsenick* are very powerful Poisons, and ought never to be thought of as internal Medicines, though some have been so daring to prescribe them. They consist of an acrid Salt, and a kind of mercurial or metallick Substance, which discovers itself when they are distilled in a Retort with any fat Substance; for, with a strong Fire, the *Arsenick* will be raised into the Neck of the Vessel, in a metallick Form like *Antimony*.

The arsenical *Magnet* is the best Preparation of Ratsbane for external Use; it has that Name from its supposed Power of attracting poisonous or other morbid Matter, from the Centre of the Body to the Surface. It is a powerful Ripener, and has been sometimes used with Success in Venereal Buboës.]

12. Of Sal Gem.

Pomet. *SAL Gem* is a natural Salt, so called from its Clearness and Transparency, like unto a precious Stone, which the *Latins* call *Gemma*. This Salt is found naturally in the Bowels of the Earth, in several Parts of *Europe*, principally in *Poland* and *Catalonia*. And since I have not myself been upon the Spot where it is, to confirm the Truth of what I say, it may not be amiss to let you see what Dr. *Perou*, of the Faculty of *Montpellier*, has written to me upon the Occasion, who says, That he was in *Poland* in the Month of *March* 1674, with his Eminence Cardinal *Janfon*, who having the Curiosity to take a View of the Salt-pits of *Willisva*, near *Cracow*, had

had a mind to go down into them, which he did on a kind of Litter made for that Purpose, attended by divers of his Servants, with Flambeaux in their Hands. Being come to the Bottom, which was very deep, he was received by the subterranean Inhabitants, who live there with their whole Families, but look extremely pale, and was presented by them with Beads and Crucifixes; which Dr. *Perou* afterwards examining by his Taste, found to be made of a Salt, and to have the same Taste as that which the Druggists call *Sal Gemmeæ*. The Cardinal had further Curiosity, and was conducted to the Workmen, who with Chissels and Hammers get this same Salt out of the Rocks, as they do Stones out of a Quarry. There were two Sorts of Salt in these Mines, and in the same Veins; the one finer, being more pellucid and transparent, which these Beads, &c. were made of, and which they separate from the other; which the *Poles*, and other Northern People, use in their Kitchens, and for their Tables. On seeing this, Dr. *Perou* was able to determine concerning the Pieces of Workmanship that his Eminence had presented him, that they were made of the purest true *Sal Gem*, sold by the Druggists, used by the best Dyers. As to the Salt of *Catalonia*, hear what Mr. *Tournefort*, who has been upon the Spot, says also in a Letter to me. "There are four Sorts of Salt in the Mountains of *Cardona*, a pretty considerable City in *Catalonia*. The first, and most common, is a fossil Salt, white, and pretty much resembling Sea Salt, only not granulated, but cut out in large Pieces, as we do rough Stones in our Quarries. The second is a Salt of an Iron Grey, or Slate Colour, which differs only from the former, in that it has a little blackish Earth mixed with it. The third is a red Salt, nearly of the Colour of Conserve of Roses, and differs from the others, in having a Mixture of Bole, or a kind of Rust of Iron in it. The fourth is the purest of all, and indeed the true *Sal Gem*, as transparent and bright as Rock Crystal. These several Sorts of Salts lie in *Strata*, or Beds, in this Mountain, and are very proper for any Uses of Life, and enter or penetrate into Flesh, better than Sea Salt, being not so fixed, and approaching nearer the Nature of Salt-petre. *Sal Gem* is easily wrought into what Figures you please; and accordingly little Boxes, Beads, and Crosses, and other the like Things are made of it. But nothing comes up to the Beauty of a certain Cavern in this Mountain, which is adorned on all sides with most admirable Congelations of this Salt.

The People hereabouts affirm, that this Salt grows in its respective Abodes, and the Holes that

you empty fill again after some Time; but this wants Confirmation."

Of the several Sorts of *Sal Gem* which I have spoken of, we deal in none but the best, that is, in thick Pieces, is easily broken, clear, and transparent, and fit for the Dyers Use. It is very observable of this Salt, that it grows red-hot, like Iron, in the Fire, and crackles there but very little, though on the other Hand it easily dissolves, being exposed to the Air; yet it may be cleansed from Dirt, by washing and drying it again immediately, without Injury: It is brought us from many Places, but in greatest Quantities from *Poland*. Mr. *Furetiere* and other Authors say it comes from the *East-Indies*; and that there is a Kingdom called *Danzal*, which signifies with them a Country of Salt, which affords yearly a Loading for six hundred Camels, which in *Ethiopia* is as ready Money. I do not think it worth while to waste Time in controverting what *Pliny* and others have observed concerning this Salt, when they tell us, that in *Charros*, a Town of *Arabia*, Houses are built of it; and Water is used instead of Mortar to bind the Salt Stones; or that the Sea derives its Saltness therefrom, &c. But I must not here forbear to relate, that there are such Vegetations of Salt produced in the Mine, that Mr. *Tournefort* has a Vegetation of fossil Salt as white as Sugar, almost two Feet high, like a Shrub, growing out of a Root; which, without all Doubt, is one of the greatest Curiosities in all *Europe*.

Sal Gemmeum, *Sal Fossile*, or *Sal Gem*, is a Mineral, white and crystalline Salt, *Lemery*. which grows in Form of Stone, or a Rock, in several Mountains in *Catalonia*, *Poland*, *Persia*, and the *Indies*. This Salt being broken, is shining and transparent as Crystal. They say that certain People of the *Indies*, which inhabit the Countries where it is met with, but rarely, build transparent Houses with *Sal Gem*, which they work like Stone. The Taste of *Sal Gem* is like that of Sea Salt, but a little more penetrating; they use it with their Meat. Out of the Salt Waters of their Springs and Pits, in the *Franche Comté* and *Lorraine*, they make a *Sal Gem*; they evaporate these Waters to make the Salt which they use in those Countries as we do Sea-salt. There is made by Distillation, of *Sal Gem* an acid Spirit, altogether like Spirit of common Salt. *Sal Gem* is incisive, attenuating, penetrating, resolving, aperitive, laxative, proper in the Cholick, and to open Obstructions: They substitute in Compositions *Sal Gem*, for *Indian Salt*, called *Sal Indum*, which some believe to be a kind of Mineral Salt, and others Sugar.

[*Sal*

[*Sal-Gem* is the *Sal Gemmeus*; *Aldr. Mus. Met.* 301. *Sal Fossilis, qui et Sal Gemmæ in Officinis dicitur*, *Worm.* 20. *Sal Fossilis pellucidus panonicus, qui dicitur in Officinis Sal Gemmæ*, *Kentm.* 9. It is of several Colours, white, grey, yellowish, reddish, and pellucid like Crystal; which last is the most pure, and ought to be esteemed the true *Sal Gem*, and only used in Medicine. It resembles Crystal both in Colour and Brightness: There are huge Rocks of it in *Poland*, *Hungary*, *Lithuania*, and other Places; its Virtues are much the same with those of Sea Salt.]

13. Of Sea-salt.

Pomet. *SAL Marine*, or *Sea-salt*, is a Crystallization made of Sea Water, performed by the Sun, and reduced into Grains of a Cubick Figure, as Monsieur *Des Cartes* has made appear. As to its Origin, some will have it to proceed from the abovementioned Fossil Salt, or *Sal Gemmæ*; but since I cannot decide this Affair, it may not be amiss to transcribe here what Monsieur *Lemery* has written concerning it, *p.* 345.

Sea-salt is made at *Rochelle* in the Salt Marshes, which ought to lie a little lower than the Sea, and to be of a Clay Mould to retain the Salt Water that is drawn off into them; so that all Places that are contiguous to the Sea, are not fit for the Purpose.

When the Season begins to be hot, which usually happens in the Month of *May*, the Water that has lain in the Marshes to preserve them in the Winter, must be drained off; then the Sluices or Cams are to be opened, to let in what Quantity of Salt Water you please, which must be contrived to pass through many different Channels, where it is purified and becomes hot; then it is conveyed into plain level Places, in order for the Salt to cream. This Salt does not shoot throughly, but during the excessive Heats, the Sun evaporating some Part of the Humidity, and the Breezes from the Sea, which happen after the Heats, by their Coolness condensing and crystallizing the Salt.

But if it should chance to rain during this Process, only two Hours, there would be no making Salt again in fifteen Days Time, because the Marsh must be made clean, and all the old Water taken out, and other let in, in its Place.

Besides the aforesaid *Sea-salt*, there is the White Salt of *Normandy*, which they make with Water out of a sort of Mud or Sand that the Sea throws up in the Summer, and upon which the Sun has shone some Time; and when the Water is sufficiently impregnated with the Salt, that it will dissolve no more, which is found by the Swimming of

an Egg in it (for every Body knows that Water can be charged but with a determinative Quantity of Salt or Sugar) then the Water is to be strained through Straw; and when it is very clear, to be put on the Fire, and boiled till it comes to a Skin, and afterwards put into Baskets to reduce it to what we see it. The more this Salt is wrought, the whiter, pleasanter, and better Quality it is of; its constant Softness is besides very peculiar to it, as well as its growing the more insipid the longer it is kept. There are still other sorts of Salt in *France*, as that of *Lorrain*, which is made with salt Water cast upon hot Plates of Iron; that of *Franche Compté*, and many more, which I forbear to speak of, not having any Commerce in them.

Of the Purification of Sea-salt.

To purify Salt, it must be dissolved in Water, and the Dissolution filtrated through Paper; then the Humidity is to be evaporated in an Earthen Pan, and so there will remain a very white Salt; but it will be purer and better, if instead of evaporating all the Humidity, Part is left, and it be set to crystallize in a cool Place; for then at the bottom of the Vessel will be found the finest Salt, which may be separated from its Moisture and dried; then ought Part of the salt Liquor to be evaporated again, and having put the Vessel into a Cellar, let it crystallize again; thus must you continue to evaporate and crystallize, till at last all the Humidity be evaporated, because it will not shoot into Crystals any more; the Salt that is behind being filled with an oleaginous or bituminous Matter that hinders Crystallization. If you would make the Salt up into Loaves, like to those of Sugar, it must be put into Moulds when it is a little more evaporated than to a Skin, and after it has lain a little to coagulate and stiffen, it must be put into a Stove to dry it perfectly. This Salt, well purified, differs not in Appearance from double refined Loaf-sugar.

Decrepitated Salt is a *Sea-salt* calcined by the Fire, which serves for many Purposes.

Of Spirit of Salt.

Spirit of Salt is an Amber-coloured Liquor drawn from dry *Sea-salt*, by the Assistance of dried Potters Earth, a Retort, and Fire. The best *Spirit of Salt* we have comes generally from *England*, and if it is good it must be void of Phlegm, and faithfully and carefully prepared, of a fine yellow Amber Colour, and of a very acid and pungent Taste. I shall not spend Time, at present, to run through all the Particularities and different sorts of

Spirit of Salt; Monsieur Lemery hath done it at large already: Only I must observe of *Spirit of Salt*, that that which is right and good is much in use in many Cases, as in Hernia's, Apoplexies, Scurvy of the Teeth, Gums, &c. The way of taking it, is by a few Drops in Water, or any other Vehicle, *ad gratum acorem*; for cleansing the Teeth, mix it with clarified Honey of Roses. Those that would have a dulcified Spirit of Salt, to be taken in a greater Quantity, may make it according to Basil Valentine, by mixing Spirit of Wine and Spirit of Salt, equal parts, and digesting them together in a Sand-heat for three Days.

Sal Marinum, Sal Commune, or Sea Lemery. Salt, is a Salt they make from the Sea

Water by Evaporation and Crystallization. I believe that the Origin or Rise of that Salt comes from *Sal Gem*, and several Reasons confirm me in this Opinion. The first is, that Sea-salt is altogether like *Sal Gem*, or that Salt made from the Springs in the *Franche Compté*, the Pits of *Lorraine*, and several salt Lakes in *Italy* and *Germany* whence Salt comes, as all the World knows. The second is, that there is no Salt whereof there is such Plenty as of the *Sal Gem*: It fills not only in *Europe* abundance of Mountains of a great and vast extent, but it is found in almost all the Mines in *Ægypt* and the *Indies*; and there is no doubt but it is at the bottom of Sea, as well as the Earth we live upon, where we meet with Mountains, Rocks, and Mines, full of *Sal Gem*. The third is, that the Naturalists have at all Times observed, that the Waters which pass through the Mines of *Sal Gem*, and are loaded with the Salts, flow by an Infinity of Channels into the Sea. The fourth is, that the Sea-salt must necessarily be made in the Land; for if but a little versed in Chymistry, one may know that fixed Salt composed of an acid Earth, as the Sea-salt is, could never be perfected in the Sea Water; it wants the Earth to imbody the acid Liquor, otherwise it would always remain a fluid Salt, and never become solid. If we make a chymical *Analysis* of Sea-salt, one may draw from thence a great deal of acid Liquor, which being separated from the Earth, can never gain again its Consistence of Salt. This Argument being clear and demonstrative, it is likewise plain, that the Sea-salt must receive its Elaboration in the Earth before it is conveyed into the Sea: And as we see no Salt so plentiful in the Earth as *Sal Gem*, we may well believe it is that which gives a Saltness to the Sea; besides, the Salt which we now take from the Sea is entirely like it in Taste, in Quality, and in Principles.

But I shall propose some Objections made against this: They say, that it is difficult to conceive that

the Sea, which is so large, and of so prodigious an Extent, should receive all its Saltiness from *Sal Gem*; for though there is great Quantities of this Salt in the bowels of the Earth, there does not appear enough to salt so much Water.

To answer this Objection, I say, that the Difficulty we apprehend of the *Sal Gem's* being sufficient to salt the Sea, proceeds from this; that we do not see the Quantity of Salt Mines, as we do the Extension of the Sea Water: But if we consider that the Earth is full of *Sal Gem*, or the like, in millions of Places, and that it discharges itself into the Sea perpetually; there is no doubt but we may have room to comprehend that the Earth, in all its Parts, contains Salt enough in it to make the Sea Salt.

Another Objection they bring is, that according to my Argument the Sea ought every Day to encrease in Saltiness, since it perpetually receives fresh Salt, which cannot be disposed of otherwise. I answer, that we cannot perceive any Augmentation of the Sea's Saltiness; for if there be a great deal of Salt that is brought into it, there is likewise a great Consumption by Evaporation and the Motion of the Waves, that are driven with such Rapidity and Violence, that they volatilize a great Share of Salt that is received in Vapour, as may be sensibly perceived by the salt Air we breathe in, when upon the Sea, and which contributes much, with the Agitation of the Ship, towards the Provocation to Vomiting. This Salt is driven by the Winds upon the Shore, where it is useful to make the Land fertile; and by a perpetual Circulation it is brought to the Sea again.

In *Normandy* they make Sea-salt by evaporating Sea Water over the Fire in great leaden Cauldrons to a Dryness; there remains a white Salt that is less piquant and less salt than that of *Rochelle*, because of the Evaporation, and perhaps occasioned from some Particles of Lead that are dissolved in it, which have blunted its Points. This kind of Salt loses its Strength as it encreases in Age.

There is a Salt prepared by Crystallization at *Broüage* and *Rochelle*, besides several other Parts of the Country where there are Salt Lakes. The *Rochelle* Salt is grey, because of a little Earth that it carries along with it; it is nevertheless more penetrating, and saltier than the white *Normandy* Salt, which is made by Evaporation; but it is not so piquant as *Sal Gem*, because of the violent Motion of the Sea Waves, which blunts its finer Points. It may be rendered white as Sugar, by dissolving in Water, filtrating the Dissolution, and evaporating to a Dryness: But as in this Purification we separate it from a great deal of Earth, which made it weaker,

weaker, it does not by this Means encrease its Strength; but on the contrary it is less biting, because that the Fire has carried off, or blunted several of its more subtile Points. Sea-salt contains a great deal of Acid, a small Quantity of Sulphur and Earth. It is incisive, penetrating, desiccative, aperitive, resolute. It is used in Apoplexies and Convulsions; they mixed it in Baths and Suppositories, and being applied hot behind the Neck, it rarefies and dissipates Catarrhs.

[Alimentary Salt is made by the Evaporation of the Water of the Sea, or Salt Springs, Fountains, &c. and is of different Colours and Degrees of Purity, according to the different Methods used in making it. The acid Spirit drawn from it by a Retort, is, with proper Additions, the only dissolvent of Gold, and it also dissolves Tin, but will not touch Silver, or Lead. If this Spirit, when very pure, be saturated with Salt of Tartar, it concretes into a Substance resembling common Sea-salt in Taste, and in the cubical Figure of its Crystals; whence it appears that Sea-salt is an Acid perfectly saturated with an alkaline Salt. The Spirit is in great Esteem for promoting the Secretion of Urine, preventing the Stone, curing Dropsies, allaying Thirst in Fevers, and conquering the Malignity of the Juices in the Scurvy; its Dose is from three to fifteen Drops.]

14. Of Nitre, or Salt-petre.

Pomet. **SALT-PETRE**, which the Chymists call the *Dragon*, *Cerberus*, or the *Infernal Salt*, is an artificial or factitious Salt, drawn from several sorts of Materials, as from old Stones, whence it has its Name; from Earth, from Ashes, and also from Pigeons Dung. I shall not describe here the many different Ways of making Salt-petre, seeing they are largely described in the *Transactions* of the Royal Society at *London*; and also because it is easy to see it made in very many Places in *France*, and especially at the Royal Arsenal at *Paris*, where it is made in great Quantities, and where they divide it into half a Dozen Sorts, according as it is more or less purified; but the finest and best is what will hardly dissolve in Water, which they send in Casks to the Frontiers; and this Salt-petre may be kept almost in any Place without Loss or Decay, but is not exposed to Sale.

Besides the Salt-petre of several sorts made in *Europe*, we have it brought in large Quantities from the *East-Indies*, sometimes rough and unpolished, and at other Times as well purified and refined as any whatever. There are moreover other sorts of

natural Salt-petre, as that which is found sticking to Rocks and old Walls, in small white Crystals, and is what the Antients called *Aphronitrum*. Salt-petre is made also in *Ægypt*, with the *Nile* Water, after the same Manner as common Salt is made with us at *Brouage* or *Rochelle*; and this Salt-petre, made of the Water of the River *Nile*, is that which was so common in *France*, about sixty Years ago, and which used to be sold at a cheap Rate to the Whitesters, to blanch or whiten Linen, under the Name of *White Pot-Ashes*, *Alkali*, *Natrum*, or *Anatrum*.

There is nothing that has more perplexed the Antients, as well as Moderns, than the *Natrum* of *Ægypt*, and that even whilst it was the commonest Thing in the World; for at *Paris* alone, there was consumed of it more than 2,000,000 Pounds yearly, without reckoning what the Tanners made use of to salt their Skins and Hides, which was the Reason it was prohibited afterwards; and since is become so scarce, that at present it is worth its Weight in Silver, and is prohibited to be sold by Merchants under large Penalties. Some will have this *Natrum* of *Ægypt* to have been a natural *Borax*, or a Salt drawn naturally out of the Earth in grey hard Pieces; some, that it was the volatile Salt and Froth of Glass-metal taken from the Pots and Furnaces of Glass Founders, and that it is either grey, white, brown, or bluish, altogether unfit for Vitrification, and fit for nothing but to throw to Sheep or Pigeons; but nothing can be more wide of Truth than this, since the true Salt of Glass is still so common among us, that it is sold not above a Groat, or five Pence a Pound, and never given to any sort of Cattle or Beasts; but used chiefly by Potters, and *Dutch-Ware-makers*, to prepare the Sand where-with they whiten and varnish their Works. And Light and Darknes are not more contrary than these two Things; for the Salt of Glass is in Cakes or Stones, extremely heavy like Marble, contracting no Moisture by the Air; whereas the *Ægyptian Natrum* is a white Salt in great crystal weighty Masses, salt and nauseous to the Taste; and besides, easily dissolving into Liquor, when exposed to the Air, and is of some Use too in Medicine, being an Ingredient of the *Lap. Crolii*. As for these last mentioned kinds of Salt-petre, we have but very little of them, and consequently make use of the artificial or factitious, which ought to be made choice of good and well-worked, according to what Degree or Quality it is of; but however, let it be always dry, and as void as possible of Salt. The common sort, when good, must be as white, dry, and free from Salt as may be; the refined also, the whiter, drier, and more beautiful,

beautiful, long, and large Crystals it is in, the better and more valuable it is.

The Use of Salt-petre is very considerable, as well upon account of the great Quantities employed in making Gun-powder, as that abundance of Artificers make use of it, and that divers chymical Preparations are made thereof. This great Consumption is the Reason why the Sale of it is forbidden in *France* to Grocers and others; and that those in and about *Paris* that use any of it, are forced (under pain of Confiscation and a Fine) to buy it at the *Arsenal*; and even then are not to use it to the Purposes of seasoning Meat, or the like, though it be proper enough for that End, as Mr. *Lemery* assures us.

Nitrum, Sal Nitrum, Sal Petreæ, Lemery. Salt-petre or Nitre, is a Mineral Salt, partly volatile, and partly fixed, which they make from Stones and Earth upon old Walls, Buildings, and the Urine of several Animals, which has lain a long time on Cellar Floors, or on the Stones; this Salt being formed by the Acid of the Air, which after it has penetrated and rarefied the Stones or Earth, is thus fixed and imbodyed.

Salt-petre is separated by Dissolution, Filtration, and Coagulation; they powder grossly the Stones and Earth that have lain a long time in the Air, or which are taken from old Buildings; they steep this in a great deal of hot Water, in order to dissolve the Salt; they throw this Infusion upon Ashes to make a *Lixivium* or Lye; they pass and re-pass the same Liquor several times upon the Ashes; then being clear, they evaporate three or four Parts of the Humidity over a Fire; then they set the Liquor to cool and crystallize, taking the Crystals off to dry, and then evaporate almost all the Moisture away, and cool again as before. They then take off the Salt-petre that contains a great deal of lixivate Salt, and which is almost like Sea-salt, only that the lixivate Salt being Alkali, it changes its Nature, because the Pores are filled by the Acid of the Salt-petre. The Salt-petre made by this first Purification is called *Common Salt-petre*; the last sort of which ought not to be mixed with the first, because it is almost fixed, and consequently not so good.

They purify common Salt-petre by dissolving it in the Water, filtering the Dissolution, and evaporating Water over the Fire, till there appear a small Scum upon it; then leaving it to cool, without stirring, there will shoot fine, long, white, clear, transparent Crystals; pour off, by Inclination, the Water that swims upon it, and take out the Crystals to dry, evaporating again part of the remaining Water, and leave it to cool; new Cry-

stals will be formed, which dry as before; and, in short, evaporate the rest of the Liquor, till you find nothing at the Bottom but a little Salt, like Sea-salt. Repeat several times the Purification of your Salt-petre after the same Manner, and every time separate some of the fixed Salt. The more it is purified, the finer, larger, more shining, and transparent are the Crystals, freed from the fixed Salt, and difficult to melt. There is likewise a natural Salt-petre, sticking against Walls and Rocks in little Crystals, which is preferable to common Salt-petre, and which the Antients called *Aphro-Nitrum*.

The ordinary Salt-petre ought to be chosen well purified, in long Crystals, as hath been said, cooling upon the Tongue, and that casts out a great Flame, when thrown upon hot Coals. It is aperitive, resolutive, abates Thirst, provokes Urine, resists Putrefaction, allays the Heat of the Blood, drives forth the Stone from the Kidney or Bladder. The Dose is from half a Scruple to a Drachm.

Of melted Salt-petre, or Salt of Nitre.

What is called *Sal Nitri* is a purified *Pomet.* or refined *Salt-petre* melted by the Fire, and reduced into Cakes of three or four Fingers Thickness.

The *Salt of Nitre*, made after this manner, is very little in use, but instead of it, a Preparation called *Crystal Mineral*, which is made by casting a little of the Flowers of Brimstone upon some of the afore-mentioned melted *Salt-petre*, is very much in use.

Sal Nitri, or *Salt-petre*, is fixed with Charcoal, and said, when fixed, to have the same Properties as Salt of Tartar, and that a red Tincture of it may be drawn with Spirit of Wine, like that of *Sal Tartari*.

Of Spirit of Nitre:

From any of the sorts of Salt-petre, by means of dried Potters Clay, a Retort, and Fire, is drawn a Spirit extremely strong and violent.

Spirit of Nitre, when good, is as clear as Rock Water, and sends forth Fumes continually, if the Bottle is unstopt. Some rascally People sell *Aqua fortis* instead of it, therefore Care must be taken about it; but it is easily distinguished from *Spirit of Nitre* by what I have said, and by the low Price they sell it at; whereas true *Spirit of Nitre* cannot be afforded under eight Shillings the Pound, or upwards.

We have but little *Spirit of Nitre* now from *Holland*, either through the small Occasion we have

have of it, or rather through the Covetousness of Workmen, that will not afford it, but chuse to make use of *Aqua fortis* instead of it; whereby their Manufactures are neither so good nor so well wrought.

Spirit of Nitre, being a strong Corrosive, is very seldom used internally in its natural State, but is dulcified, or softened, by adding as much Spirit of Wine to it; and this is observable in this Mixture, that though it requires Heat, it wants no Fire to make it; for as soon as those two Spirits come together, there arises as great an Ebullition and Bubbling, as if they were upon a good Fire. In performing this Operation, Care must be taken to avoid the Fumes and Vapours, which are very hurtful and offensive. When this Mixture is become clear, it may be taken a few Drops of it in any proper Vehicle, and is said to be very good in flatulent and nephritick Cholicks. *Sal Armoniack* dissolved in this Spirit makes the *Aqua Regia*, or *Royal Water*, so called from its Capacity of dissolving Gold, the King of Metals.

Of Aqua fortis.

Aqua fortis is a Spirit drawn from Salt-petre, and German or English Vitriol calcined to Whiteness, by means of some dried Earth or Clay, a Retort, and Fire.

Aqua fortis, so called from its Strength, though it be not so violent as Spirit of Nitre, is very much in use with a great many sorts of Workmen, such as Coiners, Mint-men, Goldsmiths, Engravers, Cutlers, and abundance of others, as well as by those who dye in grain.

The best *Aqua fortis* we have comes from *Holland*; not but that it can be made as good in *France*; but that it may be sold a little the cheaper, it is not above half deflegmated with us, and consequently not above half so strong as it should be.

With *Aqua fortis* Water and Clippings or Filings of Copper, is made what they call the *Aqua secunda*: It is a Water, of a blue Colour, which Farriers make use of; they also use that which the Workers in Silver make; or, to have it a readier way, they buy Phlegm of Vitriol, or Spirit of Vitriol, that is made of *Aqua fortis*, and give them the Name of *Aqua secunda*.

There is no fear of counterfeiting *Aqua fortis*, or selling any other Spirit for it, there being none that can be afforded at a lower Price. So that when this Water has no Phlegm in it, to be sure it is good and genuine.

Of Crystal Mineral.

Crystal Mineral, which some call *Sal Anodynum*, or *Mineralis Lapis*, and commonly *Sal Prunellæ*, is

a refined Salt-petre melted in a clean Iron Pot, throwing a small matter of Flowers of Sulphur into it. When it is thus in Fusion, the Salt-petre being thoroughly melted, and the Sulphur consumed, let it stand a-while, and then take off the Scum with an Iron Spoon, and pour out the Salt-petre into an Iron Skillet or Porringer, to make it thin, after the Manner as we see it. We send to *Holland* for our best and whitest *Crystal Mineral*; but it being in little thick Cakes, we have but small Sale or Demand for it, since it is only fit to be sold by Weight, and to those that make use of it themselves.

Crystal Mineral ought to be chosen very white, new made, and thin; and when it is to be retailled, let it be as dry as you can. That which is made with purified Salt-petre, is to be preferred to that which is made with the common or ordinary Salt-petre; and this is easily known by its Whiteness, and its keeping well. It is a Mistake to believe, as an Author of late observes, that those who hawk *Crystal Mineral* about the Streets, make it up with Alum; for it is impossible to make Alum and Salt-petre unite, the Alum becoming immediately a Scum when it is thrown into the Salt-petre, as it does with Sugar, though it is pretended to be made use of to whiten that: So that those that make *Crystal Mineral* for Cheapness, only use the common Salt-petre; for it is but melting it twice, and it will be as white as the other, and the only Difference will be in keeping; but a short time shews it, which they to their Cost know that buy of those Strollers. Care must be taken not to wrap it in Paper, which being porous attracts Humidity, and moistens the *Crystal Mineral*, and renders it unsaleable. By the Experience I have had, the best Assurance you can have that it is good, will be to make it yourself.

Crystal Mineral is very much in use in Physick; it has acquired the Name of *Sal Prunellæ*, it is said, from its specific Quality of curing Inflammations of the Throat, and the Quinsy, which some call *Pruna*, or *Prunella*; and, according to others, from the essential Salt which is drawn from the *Prunelle*, or *Sloe*, resembling *Crystal Mineral*; or because it is much made use of in inflammatory Fevers, compared to a Fire-coal, which the *Latins* call *Pruna*; or, lastly, and that most probably, because the *Germans* gave it, in making, the Figure of a Plumb.

Of Sal Polychrestum.

The *Sal Polychrestum*, so called from its many and great Virtues, is made of the finest Salt-petre and *Holland* Sulphur powdered together, and by means

means of a gentle Fire wrought into a very white light Salt.

This way of making it is very different from that of all Authors who have treated of it, who recommend a Crucible made red-hot by keeping a Fire about it for three or four Hours. I will not say this Process is not good; but the Impossibility there is of selling it when it is heavy, and of divers Colours, is the Reason why it cannot be disposed of when made thus: And I believe my Method will be preferred, since with two or three lighted Charcoals, and in the space of one Hour, a Salt may be made both white, bright, and well qualified; also more saleable, and that costs less. And since I disapprove the Ways of making the *Sal Polychrestum* hitherto used, it will not be amiss to declare the manner of succeeding best in it. Take therefore equal Parts of Sulphur and fine Salt-petre, and having heated a Crucible, not glazed in the Inside, and placed it upon five or six lighted Charcoals, so that the bottom be red-hot, throw into it a Spoonful of the Mixture of Salt-petre and Sulphur; and when the Detonation is over, and the Sulphur and Salt-petre are sufficiently burnt, another Spoonful in like manner must be thrown in, and so till all is calcined; then take the Pot off the Fire, and after it is cool break it, and therein you will find a *Sal Polychrestum*, both white, light, and very saleable. And what I say stands to Reason, since this Salt cannot be made heavy, and in a Mass, but by the great Violence and Strength of the Fire. They that would be still more curious, and would have a *Sal Polychrestum* purer and more beautiful, that is to say, crystallized, let them dissolve it in Water; and after having filtrated, and evaporated to a Pellicle, it must be put in a Cellar, or some other cool Place, to shoot into Crystals; which, when dried, ought to be in small Plates, moderately thick and brilliant, or shining like Diamonds, and of a clear White, and solid, that is, hard to break; for that which is easily reduced to Powder, is not well made.

This *Sal Polychrestum* crystallized, is preferable to the first sort, how well soever made, being free from that ungrateful Taste and evil Quality which the Sulphur, that is inseparable from the other by any other means, gives it.

In selling of this Salt there are great Cheats and Abuses committed; instead of it, many who trade in it, expose to sale only the Salt-petre itself melted and cast into a Mass: But it is easy to discover the Imposture, for as much as the true *Sal Polychrest* neither cracks nor flashes in the Fire, but will become red-hot; whereas the Counterfeit flames and crackles as Salt-petre itself, and is also

to be known by its exceeding Whiteness, and the cheap Rate it is sold at.

Sal Polychrest, as it comes out of the Crucible, or crystallized, was some Years since much in vogue in Physick; but at present being out of fashion (as there is a Mode in Medicine, as well as in every thing besides) is now seldom made use of, losing, as it were, its Virtue with the Opinion of the World. To say the Truth, those of our Nation love nothing but what is new.

This Salt has had the Appellation of fusible Sulphur or fixed Nitre given it, as *Penotus* describes at large, and which shews it to be no new Composition, since it has been known a long time by the Name of Fixed Nitre. It is aperitive, provokes Urine, and is good in Obstructions of the Liver, Spleen, and Mesentery; the Dose is from a Drachm to two Drachms.

Of the Antifebrifick Salt.

The *Sal Antifebrilis*, or Salt against Fevers, is made of the finest Salt-petre, Flowers of Sulphur, and distilled Urine, all mixed together, proceeding after the Manner directed in Treatises of Chymistry, whither the Reader may have Recourse. This *Antifebrifick Salt* is esteemed an excellent Remedy for Fevers, taken at the Beginning of the Fit, or upon the Return of it, from eight Grains to half a Drachm in any agreeable Vehicle.

Of Nitre Vitriolated.

Vitriolated Nitre is made of Salt of Nitre dissolved in Spirit of Vitriol; to which are attributed the same Qualities as to the vitriolated Tartar. It ought to be white, light, and in small *Striae* or Needles, like *Sal Saturni*.

There is also a sort of Butter prepared of Nitre, by the means of Tartar; the Process whereof may be seen in Monsieur *Charas's* Chymistry, p. 853.

[The *Nitre* or *Natrum* of the Antients was entirely different from ours; and in all probability, our Salt-petre was wholly unknown to them, as their Nitre is at this Time almost unknown to us.

The *Nitre* of the Antients was an acrid alkaline Salt, found in *Egypt* and other Places, which made an Effervescence with Acids, was used in cleansing Cloaths, and making Glass, as also in Baths and Washes: It is evident that this was very different from our Salt-petre, and it is now in a manner unknown among us, though the Antients used it very much, both in Medicine and the common Occasions of Life; and even at this Time in the Fields of the *Lesser Asia*, near *Smyrna* and *Ephesus*,

Ephesus, the Earth rises of itself in the Spring and Autumn into small Hillocks like Mole-hills; from which the Inhabitants prepare a Lye for washing of Cloaths, and make a Soap from the Salt they get from it.

The *Nitre* of the Moderns, or Salt-petre, *Nitrum*, *Aldr. Mus. Met.* 321. *Worm.* 21. *Sal Nitrum*, *Sal Petreæ*, *Mont. Ex.* 8. is a white crystalline Substance, of an acrid bitter Taste, with a certain Sensation of Cold, which concretes into long, small, and equally thick prismatic Crystals of six Sides, the outermost of which end in Points like Pyramids. It is easily soluble in Water, and melts by Fire without Deflagration. It is brought to us principally from the *East-Indies*, and is procured from Earth that has imbibed the Urine or Dung of Animals; and may be made artificially, by mixing Earth with Pidgeons or other Dung. It is also sometimes found naturally on old Walls, &c. not much exposed to Wet. All Salt-petre contains some Quantity of a kind of Sea-salt originally; and in the getting Salt-petre from the Earth that contains it, when they have boiled it in Water they let the clear Liquor stand to be quite cold before they set it to crystallize for the Salt-petre; and in the Vessels it has stood to cool in, which they call Settling Tubs, they find a Salt of the Sea-salt kind sticking to the Sides and Bottom; this they keep by itself, and call it Salt-petre-salt; and the Liquor, poured off into other Vessels called Shooting Trays, affords, by Crystallization, the Salt-petre.

15. Of Natural Borace.

THE *Natural Borace*, or *Tincar*, to which the Antients are supposed to have given the Name of *Chrysocola*, is a Mineral Salt of the figure of the common *Sal Gem*, found in the Bowels of the Earth in many Places of *Persia*; and at the bottom of a Torrent, among the Mountains of *Purbeth*, in the Country of *Radzoribron*, that reaches to the Confines of the *White Tartary*. When this Mineral is taken out of the Earth, it is exposed to the Air, that it may contract a sort of fat reddish Rust, which nourishes and preserves it from being calcined, as it were by the Influence of the Weather; and when it is as it ought to be, the *Persians* carry it for the most Part to a Palace called *Amadabat*, from whence the *English*, *Dutch*, and we, have it; and this is what we call *Natural Borace*, or the unpolished, rough, or fat *Borace*, which some Workmen employ for the same Uses as they do the refined.

We have another sort of *Natural Borace* brought us, which differs only from the former, in that it is a little drier, and of a grey Colour, which proceeds only from its having been longer exposed

to the Air, whereby the reddish fat Substance, wherewith it is covered, becomes dry, and like *English Copperas* that has lain a great while above Ground. Those that have Occasion for one sort or the other of this *Natural Borace*, must take care that it be not mixed with Stones, or other such Refuse; as it frequently happens to be. The *Venetians* and *Dutch* make that which they send us under the Appellation of *Refined Borace*.

The Antients were not out when they said there was a greenish *Natural Borace*, no more than *Agri-cola*, who rightly enough observes, that he had seen a fossil Nitre, solid and hard, like a Stone, of which the *Venetian Borace* was made; But the same Author is very much mistaken, when he says, that then no *Borace* was in use but the factitious or artificial, made of the Urine of Boys that drank Wine; Brass Rust, and sometimes Nitre beaten together in a Bell-metal Mortar to the Consistence of an Ointment; which is far from Truth, since the *Borace* he means, and which we now sell, is only the fat *Borace* refined and shot into Crystals.

Borax, *Chrysocola*, *Capistrum Auri*, *Auricola*, or *Gold Flux Powder*, is a *Lemery*. Mineral Salt that has the Colour and Transparency of *Sal Gem*, but a great deal more Pungency; it is found in certain Mines of *Persia*, and several other Places: When they take it from the Earth, they expose it to the Air, where it becomes greasy and reddish on its Superficies. This is that which is called *Fat Borace*. This Fat covers the Salts, that they cannot be penetrated and dissolved, or melted by the Air. There is likewise found a grey or greenish *Borace*, which Colours proceed from the various Impressions, that the Air being hotter or colder makes upon the Salt, by opening it more or less.

The *Venetians* and *Dutch* purify or refine their *Borace* as they do other Salts, by dissolving in Water, filtrating the Dissolution, leaving it afterwards to evaporate, and setting it to crystallize. They bring us this *Borace* under the Name of *Borace refined*. Chuse your *Borace* in fine white Pieces, neat, crystallized, and transparent. One may, by refining, separate from *Borace* a vitriolick Matter, which gives it a great deal of Sharpness; for which Reason the refined *Borace* is much softer than the natural, and ought to be preferred in Medicine: It is incisive and penetrating, proper to open the Obstructions of the Glands of the Mesentery, and dissolve the *Schirrus* of the Liver and Spleen; the Dose is from four Grains to twenty. They also use it externally to consume the Excrecences of Flesh. They may draw a Spirit from *Borace* like that of Alum, by a very strong Fire; it is aperitive, and very like Spirit of Salt: It is called

called *Chrysocola*, *Gluten Auri*, *Capistrum Auri*, and *Auri colla*, because the Goldsmiths use it to flux and solder Gold with.

Of Refined Borace.

Pomet. As *Natural Borace* is found of different Colours, sometimes greenish, and other whiles yellowish; the *Venetians*, who were the first that brought Borace into Vogue, finding it could not be well made use of with its natural Fatness and Unctuousity, considered of a way of purifying of it, by dissolving it in Water; then filtrating and crystallizing it, in order to which they made use of Cotton Matches, upon which the *Borace* is crystallized, after the same Manner as Sugar-candy or Verdigrise on Sticks or Splinters of Wood.

As for others that do not use Cotton, they reduce the *Borace* into little Stones of the Form and Figure of the Tag of a Lace, or Point; but as this sort of *Borace* had a greenish Cast, the *Dutch* have taken it to Task, and made it whiter and more vendible, and reduced it into larger Pieces, which is what we sell at this Day.

Borace, whether it be the *Venetian*, or that of *Holland*, ought to be chosen clear and transparent, of Taste almost insipid, taking Care that it be not mixed with *English Alum*, which is difficult enough to discover, if the Alum has been soaked in Water, and then exposed a few Days to the Air, to give it the natural rough Appearance of *Borace*; but this Cheat may be easily found out, if you will put it to the Test: For, first, it will by no means solder Metals; nor, being put upon lighted Charcoal, will it swell and heave like *Borace*.

Refined Borace is much in Use by a great many sorts of Workmen, and serves as well to solder, as to melt and dissolve Metals: Some use it also in *Fucus's*. It is of some Use too in Medicine, as it is incisive and penetrating, proper to open Obstructions of the Liver, Spleen, and Mesentery, and to promote the *Menses*; the Dose is from five Grains to twenty.

[*Borace* is the *Borax*, *Charlt. Foss. 9. Dougl. Ind. 18. Nitrum factitium, Arabice Borax, Worm. 21. Nitrum unde Borax excoquitur, Aldr. Mus. Met. 324.* Both the native and refined are common in the Shops; the native is brought to us in Pieces about the Bigness of a Walnut, foul and earthy, and of a dark green Colour, and greasy. It is had from *Persia* and other Places, where, in Copper Mines, they find a greenish turbid Water, which they evaporate to a proper Consistence, and afterwards make to a Paste, with the Slime and Mud of the Springs it runs from, and some Quantity

of Animal Fat. This Paste they bury for some Months in the Earth, after which, opening the Pits, they find the Water concreted into knobby Substances, which dug out of the Pits, with the fat Earth about them, are the *Native Borax*.

The *Refined Borax*, which is what we most commonly sell, is the native Kind purified by a *Lixivium* of Quick-lime. We formerly had it from *Venice*; but now the Trade of refining it is almost entirely in the Hands of the *Dutch*.

This is the *Borax* of the Shops at present; but it is evident, that it is very different from the *Chrysocola* of *Dioscorides* and *Galen*, which was a green metallick Substance, found sometimes like a loose Sand, and sometimes adhering to other metalline Matters, and was a kind of native Verdigrise, not soluble in Water, which, taken inwardly, always proved Emetick, and sometimes poisonous. They had also, beside this native *Chrysocola*, two factitious Kinds, the *Herbacea* and *Santerina*: The *Herbacea* was made of the native *Chrysocola*, bruised, calcined, and macerated in Vinegar, tinged with *Lutcola*, or Dyers Weed; and the *Santerina*, of *Cyprian Verdigrise* and Urine, with the Addition of *Nitre*. These, it is plain, must also be very different from our *Borax*; but whether the *Tincar* of the *Arabians* differs from it or not, is not easy to determine, as none of it comes to our Hands.

Our *Borax* is a fixed alkaline Salt, something of the Nature of Salt of Tartar; but differing from it in this, that it unites with Acids without Tumult. It yields nothing in Distillation but an insipid Phlegm: A Solution of it turns Syrup of Violets green; and a Solution of corrosive Sublimate to a Saffron Colour.]

16. Of Alum.

ALUM is a fossil Salt drawn from *Pomet.* Stones of different Bigness and Colour, in several Parts of *Europe*, especially in *Italy*, *England*, and in *France*. After Alum Stone is taken out of its Bed or Quarry, as you take other Stones, it is burnt in a Kiln made on Purpose as you do for Lime, or the like; and when it is calcined, its Salt, which is the Alum, is drawn out with Water, proceeding after the same Manner as in making Salt-petre. A certain Person in the World, in the Presence of a Man of Worth, maintained, that Urine was made use of instead of Water in drawing this Salt; but since his Authority is not sufficient to make him credited, I chuse rather to rest satisfied with what *Matthiolus*, upon *Dioscorides*, has written of it, who having been an Eye-witness of the Fact, has given us an ample Descri-

Description of it in his Book, *Page 733.* to which my Reader may have Recourse.

We commonly sell six sorts of Alum, to wit, the Plumous Alum, or Earth Flax; the *Roman*, *English*, *Liege*, Burnt Alum, and the Sugar Alum. As for the Round, Liquid, and Black Alum I know nothing of them.

Of Plumous Alum.

Pomet. *Plumous Alum* is a Mineral found in the *Negropont*, which some will have to be the Stone which the Antients called *Lapis Amiantus*; but as I am not sure of the Thing, I will content myself to say, that the *Plumous Alum* which we sell, is a sort of thready Stone, of divers Colours, but most commonly of a greenish white, in Figure pretty much resembling *Venice Talc*, excepting only that it is not so green nor shining; and instead of parting into Scales, this rises in white soft Threads or Filaments, like the Feathers of a Quill, from whence comes its Name; and accordingly most Part of the Plumous or Feather Alum one meets with, is almost ever in small Fibres, and but little in Stone, proper to spin and make the perpetual Matches. This *Plumous Alum*, to which some have given the Name of that of *Sicily*, is of very little Use in Medicine, and at present it is almost of no Use, since the Secret of drawing it out into Threads, or spinning it, has been lost. The Cloth made with this sort of Alum when dirty, to be made clean, needed only to be thrown into the Fire, and it would come out thence as white as Snow. And with this sort of Cloth did the antient *Romans* preserve the Ashes of their Emperors, and separate them from those of the aromattick Wood, wherewith their Bodies were burnt. Some People, at this Day, also make use of this *Plume Alum*, instead of Cotton, to make Matches; and to that End it ought to be in long Wicks, and as soft as possible. This *Alum* is a strong Corrosive, or Escharotick; for what Part soever of the Body it touches, it causes Whelks and Blisters, and a most intolerable *Pruritus* or Itch, which is to be appeased only, that I know of, by anointing the Part with Oil of Olives. Besides this *Plume Alum*, we begin to sell a certain Stone Mineral, ponderous, white, woolly, and, in a word, wholly like to *Plumous Alum*, and incombustible also, wherefore it has obtained the Name of *Asbestos*, which in *Greek* signifies incombustible; and by Corruption we call it vulgarly *Albestes*.

This Stone is found in many Places in *France*, more especially in the County of *Poyx* in *Gascogn*, where there are Quarries out of which Stones of a surprizing Magnitude are taken, and from which

Cotton Threads may be drawn fit to make Cloth, and to endure whitening or cleansing in the Fire, like that of Feather *Alum* already spoken of. And besides this, there are found in *France* (particularly about the *Pyrenees* in the Valley of *Campan*, near the Stone Quarries, about three Leagues from *Grippa*) certain Plants about two Feet high, which have Stalks all as it were silvered over, their Leaves like those of a Nettle, excepting only that they are white underneath, of a dark green at Top, and resembling Shagreen. This white Stalk steeped in Water, like Hemp, may be run into a long and round sort of Flax or Tow, of which good Cloth may be made, that will resist the Fire like *Plumous Alum*, only it will not whiten so well. And it is to be remarked, that when this Flax is put into the Fire, it immediately grows red, but black if applied to a Candle. Perhaps what I say may not easily meet with Credit; but since I have some of it in my Possession to shew to those who would not believe, and the Person who has collected it is still in Being, and a Man of Reputation and Fidelity, I thought it might not be amiss to advertise the Publick, that *Plumous Alum*, and what we call the *Asbestos*, are not the only Drugs in Nature capable of enduring or resisting the Fire.

This incombustible Plant might be called *Asbestos*, and the Tow that comes of it *Incombustible Flax*, being long, large, and soft, like Flax.

Alumen Plumbeum, sive *Aluman Scissile*, or Feathered Alum, is a kind of stringy *Lemery*. *Talc*, like the Feathers of a Quill, whence they call it *Feathered Alum*. It is very soft to the Touch, of a white, greenish, shining Colour, is produced in the Mines of *Negropont*. It will neither flame nor consume in the Fire. Some Alchymists use it for Wicks in their Lamps; it is called *Scissile*, because it is easy to break and divide.

Of Alum of Rome.

Roman Alum, which we also call Alum *Pomet.* of *Civita Vecchia*, because great Quantities are made in the Neighbourhood of that City, is a Stone Alum of a middle Size, red without, and within, clear and transparent, and of a disagreeable styptick Taste. This Alum is of a reddish Colour; the Mine from whence it is drawn being of the same.

Chuse the *Roman Alum* that is reddish throughout, in the Inside as well as the Outside, because there are some who colour the *English* and *Liege* Alum of a dark Red, but the Cheat is easily discovered; for if you find it not as red within as without, it is a Sign it is counterfeited. It ought to be as free of small or broken Pieces as possible;

which yet is no Disadvantage to those who use it, provided the Alum be pure and genuine, but only to such as retail it.

Roman Alum is much in Use with Dyers, Tanners, and those that make counterfeit Pearl, but it ought to be very good for all of them.

Of English Alum.

English Alum, to which the Antients have given the Name of Roch or Rock Alum, White and Glass Alum, is an Alum clear and transparent as Crystal, which is sent us from *England* in Pieces of different Figure and Bigness; since sometimes it is to be met with in Lumps as big as a Man's Body, sometimes clear and white as Crystal, and at other Times blackish and moist: In fine, the Glass Alum is more or less beautiful, according as it has been more or less purified.

As this Alum is much made use of by several sorts of Trades, particularly by Mint-men or Coiners, and Dyers; as also for many Preparations in Physick, Care ought to be taken in the Choice of it, that it be white, clear, and transparent, as dry and as free from any sort of Filth as may be: Also Care must be had that it be not *Liege* or *Meziere* Alum, which is greasier and fatter than that of *England*, and not so fit for Dyers Use, and which they never make use of but for want of the true *English*. We had not long since a greenish sort of Alum, like Salt-petre, drawn from a Stone taken out of the Mines in the Neighbourhood of *Soissons* in *Picardy*; but as this Alum is of no Account, as well by reason of its ill Looks, as because we continue ignorant of its Virtues, I shall say no more concerning it. From the *English Alum* is distilled a clear and acid Water, which we call Alum Water, and which is used as an Ophthalmick. After the Phlegm comes over an acid Spirit, useful in Fevers, whether continual or intermitting; and also good against small Ulcers or Excoriations in the Mouth, from four to eight Drops; that which remains in the Vessel being a light white Substance or Mass, is what we call Burnt Alum: But as this Water and Spirit of Alum are in little Request, those that have Occasion for Burnt Alum do not trouble themselves about distilling, but only put *English Alum* into a Pot, which they place in the midst of a good Fire; and when the Alum is become very light and white, they take it out and keep it for Use.

Calcined or Burnt Alum ought to be light and friable, that is, easily reduced to Powder; so that Care must be taken that it be not such as has been passed through a Silk Scarce or Sieve, which is put into a Bag tied close, to make it into Stones

or Lumps; but this Cheat is easily discovered, the counterfeit Alum being heavy, extremely white, more like Paint or Plaister than any thing else, and of a styptick Taste.

True Burnt Alum is esteemed a very good Escharotick to eat away proud luxuriant Flesh. Persons of Distinction commonly wear it in little Bags under their Armpits and their Feet, to prevent sweating, but then it ought to be extremely fine.

Of Saccharine, or Sugar-like Alum.

Saccharine Alum, because it resembles Sugar, is made of *English Alum*, Rose-water, and Whites of Eggs, boiled together till it is stiff; and this Alum so boiled, and reduced into a Paste, what Figure or Form you please may be given to it; and when it is cold, it becomes as hard as a Stone.

Some make this Sugar Alum enter into the Composition of their *Fucus's*.

There are, moreover, other sorts of Alum, namely, that white transparent Stone, in every particular almost like Rock Crystal, to which the Name of *Scayolle Alum* is given; the *Lapis Specularis*, which is found in the Quarries of *Passy*, and which, after it is calcined, is of a very beautiful White. Not long since, great Quantities of this were found in the clayey Earth of *Passy*. Others make use of another sort, which we call *Gip* or *Plaister*. Pot-ashes also have obtained the Name of *Alumen catinum*, as is observed in its Place.

Some say the Name of *Alum* is derived from the *Latin Lumen*, which signifies Light.

Alumen, or *Alum*, is an acid mineral Salt, made from a kind of Stones of *Lemery*. different Sizes and Colours, which are found in the Quarries of *France*, *Italy*, and *England*. They calcine this Stone, and then make Alum of it by Solutions, Filtrations, and Coagulations, as they make Salt-petre. There are several sorts of it, as *Roman Alum*, *Roch Alum*, and *Sugar Alum*.

The *Roman Alum*, or that of *Civita Vecchia*, called *Alumen Romanum*, is a Salt in Stones of a moderate size, that are reddish within, of an acid styptick Taste; they use it outwardly for stopping of Blood, and inwardly in Gargarisms for Inflammations of the Throat, and to clean the Teeth; they dry it or calcine it upon the Fire to free it from its Phlegm, then it is called *Burnt Alum*: This is an Escharotick, and serves to eat away proud Flesh, dissolve Excrecences, and open Ulcers and Shankers.

Roch Alum, White or *English Alum*, called *Alumen Rupeum*, or *Roch Alum*, is a Salt in large great Lumps,

Lumps, that are clear, white, and transparent as Crystal, which is brought from *England*. This *Alum* has the Virtues of the former, but is not so strong: The Dyers, &c. use it. The *Alum* called *Alumen Saccharinum*, or *Sugar Alum*, is a Composition made with Roch Alum, Whites of Eggs, and Rose-water, boiled together to the Consistence of a Paste, and formed, while hot, into little Cakes like Sugar-cakes, whence it takes its Name. *Alumen Catinum*, or *Dish Alum*, because it is made in a Platter or Dish, is what we call *Pot-ashes*, or the *Ashes* of *Kali* calcined, or some other Ashes, or *Alkali Salt* made from Vegetables. They call it *Catinum*, because they used to dry it in a Plate or Dish.

[*Alum* is a Salt either natural or artificial; the natural *Alum* of the Antients was either liquid or solid. Of the liquid, there are two Kinds mentioned by the Antients, one pure, and the other impure. The first was very common, and was a smooth milky Substance, always moist; the other rough and foul. The solid they distinguished according to its Figure into fissile and round: The fissile was either in Form of a compact uniform Glebe, or divided into Filaments; the round of a more loose Texture, with the Appearance of Bubbles upon it, or full of Holes like a Sponge; or else consisting of *Strata*, loosely laid on one another.

The artificial or factitious *Alums* are distinguished by the Countries where they are made. They were wholly unknown to the Antients, though with us they are the only kinds in Use.

The kinds of *Alum*, kept at present in the Shops, are three.

1. The Common *Alum*, *Alumen rupeum candidum et pellucidum*, *Ald. Mus. Met.* 324. *Alumen rupeum sive Chrysellinum*, *Ind. Med.* 7. This is procured with us from a Species of Stone or Ore burnt, and afterwards boiled with the Addition of Urine and *Kali*, or other Sea Plants. It is got in other Places by the Evaporation of Mineral Waters; and in some others is found in natural Veins in the Earth.

2. The *Roch Alum*, the *Alumen Romanum sive rubrum*, *Ind. Med.* 7. *Alumen Rupeum seu Rochæ*,

Charlt. Foss. 9. *Alumen Rochæ, Worm.* 23. This is like the former, but reddish; and is brought to us from *Italy* and *Smyrna*. It is made as we make the common *Alum*, by burning the *Alum Stones*, and boiling them; but without the Additions of Urine, &c.

3. The *Plumose Alum*, *Alumen plumeum seu Trichites*, *Schrod.* 3. 477. *Alumen Plumæ quod Scissile Latinis*, *Aldr. Mus. Met.* 331. This is light, and composed of Filaments; it is soluble in Water, and melts in the Fire; therefore is evidently different from the *Asbestos*, with which it has for many Ages been confounded by a Number of Authors.

Alum is a powerful Astringent and Drier; the natural *Alums* have a weak Smell of *Aqua fortis*; the factitious have little or no Smell. A Solution of *Alum* curdles Milk, turns an Infusion of Galls turbid and whitish; concretes with Salt of Tartar into a white *Coagulum*, without any sensible Heat or Smoke; and when the Mixture is made with *English Alum*, an urinous Smell is perceived from the Urine used in its Crystallization.

Alum, by a chymical Analysis, yields an acid Spirit, like that of Vitriol, but not strong, nor in any great Quantity; for the astringent Earth, that is the Basis of *Alum*, retains the acid Salt so firmly, that the Fire cannot separate them; and the *Residuum* of the Distillation will crystallize into *Alum* again, if dissolved in Water. Hence it is evident, that *Alum* consists of an acid Salt of the Vitriolick kind, and an astringent Earth very closely united together.

The *Asbestos*, or *Earth Flax*, is the *Amianthus sive Asbestos*, *Ind. Med.* 8. *Lapis Amianthus*, *Matth.* 1387. *Laet.* 118. It is remarkable for bearing the Fire unhurt; but is never used in Medicine.

As to the vegetable *Asbestos* of our Author, I judge him to be a Man of great Veracity, therefore cannot think he would propagate a Falshood knowingly: But I suppose he was imposed on by the Person who pretended to have gathered what he gave him from a Plant.]

BOOK IV.

OF BITUMENS.

P R E F A C E.

The Word Bitumen properly signifies a fat, sulphureous, inflammable Matter, which is found of different Colours and Consistence, either within the Earth, or upon it, or swimming upon the Face of the Waters. Of these we have several Sorts, some hard, others soft, and some liquid, like Oil. The hard Bitumens that we sell, are the Yellow Amber, Black Amber, or Jet; Jews Pitch, natural and artificial; Pit Coal, Kennal Coal, or Black Stone, and Sulphur. The soft Sorts are Naphtha, the Bitumen of Colao, of Syrnem, and Copal Bitumen. The liquid are Naphtha of Italy, and the Petroleum, or Rock Oil. Of all which hereafter in their Turns.

I. Of Amber.

Pomet. **A**MBER, to which the Antients have given the Name of *Succinum*, or *Carabe*, is a Bitumen of different Colours, being either white or yellow. This Bitumen is liquid when it is in its natural Place of Production; but as it comes from thence, it hardens, and becomes such as we see: And as it passes from its Recesses in the Earth, in a State of Fluidity, swimming upon the Waters, it is apt to carry with it what is in its Way; which is the Reason we find many extraneous Bodies in our Amber; also not hardening all at once, but by Degrees, a great many Insects stick to it, and there die. Most of the Yellow Amber we have is found upon the Banks of certain small Rivers, running into the Baltick Sea, in the Ducal Prussia. It is also found upon the Sands, which have been cast up by the Winds, and is a Commodity which brings no inconsiderable Profit to the King of Prussia, for he raises above 20,000 Crowns per Annum from those Places where it is found, over and above the great Charge they are at in securing and preserving it from others; so that it necessarily follows, that this Yellow Amber yields a yearly Rent of more than 100,000 Livres.

What I say may, perhaps, seem strange to those who do not know the great Use there is of Amber in China, and amongst the Savages, as well as in Europe; but the greatest Consumption of it is in

Austria, Germany, in Poland, and in the Neighbourhood of Venice; and the Venetians were the first that brought it into such a Vogue and Fashion thereabout, there being few People in Lombardy, or all along the Po, but wear Amber Necklaces, believing they keep them from Quinsies, and other ill Effects of the Neck and Throat, to which they are very subject, by Reason of the bad Waters they are forced to drink in those Parts: History also informs us, that the Romans made such Account of it, that Nero caused great Quantities of it to be imported; but no where is Amber more esteemed and valued than in Poland and the Lower Hungary, a pretty handsome Piece, without Fault or Flaw, being there as valuable, and preferred even to Gold; such Lovers and Admirers of this Commodity are they. As for France, it is by no means so much in Esteem there, though it was not many Years ago that all People of Quality and Fashion wore Necklaces of it; but at present it is become so vulgar, that none but Servants make use of it. Besides the great Use of Yellow Amber for Trinkets, &c. it is of Use in Medicine, not only to powder, but to draw a Tincture, a Spirit, volatile Salt, and an Oil, from, and to make a Varnish with Spirit of Wine.

Amber ought to be clear and transparent, capable of attracting Straws, whence comes its Name of *Carabe*, which in the Persian Language signifies draw Straw. When it is designed for any Piece of Workmanship, or to powder, it should be white;

white; but when it is to undergo the Fire, it matters not of what Colour it be, provided it is genuine *Amber*; for there are a great many that sell the *Copal* of *America* for it, but it is easily distinguished from it, the *Copal* being in Pieces of the Bigness and Figure of Gum Araback, and the true *Carabe* ordinarily in great Lumps, and also most commonly in a sort of Film or Skin, which serves as a kind of *Matrix* for it; and then again *Amber* burnt at the Candle sends forth an exceeding strong Smell; and moreover, as hath been noted, will attract Straw, which *Copal* will not do. Some have assured me that *Yellow Amber* is counterfeited with Turpentine and Cotton, or with Yolks of Eggs and Gum Araback: But as this sort of false *Amber* would be worth little or nothing, I cannot conceive how any one need fear its being adulterated with those Things.

Amber is powdered upon a Porphyry, and reduced into Cakes, which are of some Use in Physick, particularly to restrain Spitting of Blood, and to stop Dysenteries and other Lasks; Dose from ten to thirty-six Grains in any appropriate Vehicle. Also from Powder of *Amber*, with Spirit of Wine, is drawn a yellow Tincture, endowed with a great many good Qualities, especially in apoplectick and epileptick Fits, and paralytick Cases, taken from ten Drops to a Drachm in any agreeable Liquor: Some dissolve pure fine Camphire in this Tincture to make what Monsieur *Soleysel* calls the *Flaming Balsam*, and recommends for Wounds, Bruises, or cold Humours in Horse or Man, which may be seen described in his Book, Page 274.

Karabe, *Succinum*, *Electrum*, *Ambra Lemery*. *Citrina*, or *Yellow Amber*, is a hard Matter, like a Stone, yellow, citrine or white, of a fine, shining, transparent Colour, that is brought from the *Ducal Prussia* in Pieces of different Shapes and Sizes: This *Amber* is thrown by the Waves of the *Baltick Sea* up the Rivers of *Prussia*, especially by certain Winds. They likewise find both the liquid and solid on the Banks of several little Rivers, and upon the Brooks that are about the same Sea; that which is liquid, hardens in a little Time, and becomes solid as the other.

Opinions are divided upon the Nature and Origin of *Amber*. The Antients believed that it was a Mixture of Gum and Resin that flowed from Poplars, Pines, or Firs, which being confusedly carried by the Winds into the *Baltick Sea*, incorporated with the Salt, and was elaborated or worked up, and then thrown by the Waves upon the Banks of the Rivers. This Notion is rejected by the modern Authors, who have all writ that *Succinum*, or *Amber*, is a *Bitumen* or Juice of the Earth, which the Sea has raised up, and the Waves

thrown ashore about the *Ducal Prussia*, where it is formed, and hardens after the Manner we see it in. I myself followed this last Opinion in my Book of Chymistry: But as I have been convinced since by several Circumstances, I have changed my Opinion, and found that the Thoughts of the Antients, on this Subject, were preferable to those of the Moderns: For first of all, Travellers know that about the *Baltick Sea*, on the Coast of *Sweden*, there grow abundance of Poplars, Pines, and Firs, from which there flows in Summer a great Quantity of Gum and Resin, which is partly blown into the Sea by the Winds.

In the next Place, the Substance, the Colour, and the Transparency of that resinous Gum, resemble much those of *Amber*; for we have *Gum Copal* brought us that flows from Poplars, in the *Antilles Isles*, and has no other Elaboration than what it receives from the Torrent of the Water in the Rivers, from whence they take it, as has been said in its proper Place; and it is so like *Karabè*, that those who know it not well may easily be deceived; from whence it is called, *False* or *Counterfeit Karabè*. *Amber* indeed is something harder, of a higher Colour, more transparent and resplendent than *Gum Copal*, but these Perfections come from the Salt that is mixed in it, a long Fermentation and Working it meets with in the Sea, besides the Mixture of the Pine Resin with the Resin of Poplar, &c. In the third Place, the Principles that are drawn from the true *Karabè* by Chymistry, are likewise those that are taken from *Gum Copal*.

Chuse your *Amber* in fine, large, hard Pieces, clear and transparent, that will attract or draw to itself Straws, and several other little light Bodies, when the *Amber* is rubbed in your Hand, or otherwise, and applied near the same. The white *Karabè* is preferable to the yellow, but the Difference is not considerable: They use both sorts to make Necklaces, Bracelets, and little Cabinets, with several other Nick-nacks that are carried into *Persia*, *China*, and *Turkey*, where the Natives esteem them as great Rarities. They likewise make *Amber* Necklaces in *Austria*, *Germany*, in *Venice*, and sometimes in *France*.

In Pieces of *Amber* there are sometimes found Spangles, Leaves of Trees, or little Insects; as Spiders, Ants, Flies, &c. This Circumstance has given Occasion to Naturalists to enquire how these little Bodies become inclosed in the *Amber*; and it appears to me that the Difficulty is easy to resolve, since from the Opinions given, touching the Nature of *Amber*, it has been thought necessary to admit that the Substance of it was some time liquid or soft before it hardened; that during that

Time

Time, these small Bodies adhered to it, as to Glue, and were wrapped up in it, or rather were covered and enclosed therein by the Addition of fresh Matter of the same kind; so that when the Whole was hardened, these little Bodies remained wholly embalmed, as we now see them.

The *Karabè* contains in it a great deal of Oil and volatile acid Salt; it stops the Flux of the Belly, Hemorrhage, and *Gonorrhœa*, and resists Poison: The Dose is from ten Grains to half a Drachm; they likewise burn it over the Fire to receive the Fume of it, which checks the Violence of Rheum from the Head, and Catarrhs. *Karabè* is a *Persian* Name that signifies *draw Straw*; and they have given this Name to *Amber*, because it attracts Straws, especially when it has been a little rubbed in the Hand. The Reason of that Effect proceeds from this, that the subtil and insensible Particles of the Matter having been put into motion with some kind of Heat that follows the Friction, they emit on all Sides their *Effluvia*, and scatter them in the Air within their Circumference; but as they lose their Motion according to the Distance they are from their Center, they become so much weaker, and are on all Sides repelled by the Air; and in their Return they stick, by their Viscosity, to a Straw, or any other light Body they meet with in their way, and drag it along with them. The same Effect happens to several other Substances, which are rubbed after the same manner, as Wax, Suet, and divers Gums. This is called *Succinum*, from *Succus*, because it is supposed to be the Juice of the Poplar, or of the Earth.

Of the Spirit and Oil of Amber.

Pomet. From *Amber* grossly powdered, put into a Glass or Earthen Retort, may be drawn a reddish Spirit, and greenish setid Oil.

The *Spirit* of *Amber* is esteemed an excellent Aperitive or Deobstruent, and very good against the Scurvy, taken in any Liquor, from ten to twenty-four Drops.

As for the *Oil*, it is chiefly in use to allay and drive down Vapours, being put upon Silk or Cotton, and rubbing the Wrists, or Pulse, or Nose therewith. If you would have this *Oil* of a fine clear reddish Colour, you have nothing to do but to mix with it a little Earth or Sand, and to distil it again.

Those that would have a volatile Salt, or *Spirit*, or *Oil* of *Amber*, may perform all the three Operations very well with a Glass Retort and a Sand-neat. As for the volatile Salt, if you find it not good and fine enough, you need only put it into a small Vial or Glass Bottle, and sublime it upon a gentle Fire, taking care to keep it well

stopt; for this is a ticklish Commodity, that will evaporate and lose itself in the Air, and that which you will find in the Retort, is of a fine shining Black, resembling the *Bitumen* of *Judæa*, or *Jews Pitch*.

[*Amber* is the *Succinum*, *Worm.* 31. *Charlt. Foss.* 14. *Ald. Mus. Met.* 403, &c. It were almost an endless Work to recount the various mistaken Opinions about the Origin of *Amber*, but the true Account of it is, That it is a bituminous mineral Juice, formed in the Bowels of the Earth, liquid at first, but afterwards concreted into a hard stony Substance; for in several Parts of *France*, especially in *Provence*, it is dug out of the Mountains, as likewise in *Italy* and *Sicily*; but all this is of the dark and least valuable kind; the best is found in *Prussia*, where it is of two kinds, one dug out of the Earth, and the other found on the Sea-shores, which is of the same nature with the former. *Hartman*, who has wrote an accurate History of *Amber*, is of opinion, that all *Prussia* and *Pomerania* stand upon a Bed of it, because it is always met with there, in digging Pits, in great Quantities, and sometimes very near the Surface of the Earth. The chief *Amber* Mines are near the Sea-coast of *Prussia*; and from the Shore where they are situated, a Hill rises, made up of a cortical Substance like the Barks of Trees, piled one on another; under this is found a Stratum of a kind of fossil Wood, which *Hartman* believes to be the Matrix of *Amber*, because a great Quantity of it is contained in the Veins of this Wood; and wherever *Amber* is found by digging, this Substance is always found.

The *Amber* which is gathered on the Sea-shores comes from the succiniferous Hills, beat to pieces by the stormy Sea, and washed on the Beach.

As for the Choice of *Amber*, it should be according to the Use it is for; if it be to make the *Oil* the Yellow is properest, because it contains most; the White has less Oil, and therefore is to be chosen, if wanted, for the volatile Salt; the Brown is loaded with Earth, therefore not to be used on any Occasion but in want of the others.]

2. Of the Black Amber, or Jet.

JET, which, with good Reason, may be called *Succinum Nigrum*, or *Black Amber*, is also a sort of *Bitumen*, found in the Bowels of the Earth; it is a sulphureous Fossil, very hard, and of a glistering or shining Black, found in several Places of *Europe*, as well in *Germany* and *Sweden*, as in *Ireland*; as also in *France*, between *St. Beaume* and *Toulon*; and in *Ireland* it is so common, that as you go along you may see
Veins

Veins of it running through the Stones and Rocks. Some Authors are of opinion, that *Jet* is the *Yellow Amber* divested of its Oil, drawn out by the subterranean Fires, and that from thence proceed *Naphtha* and *Petroleum*; which does not seem very repugnant to good Sense.

Jet is of a like Use with *Yellow Amber* for Ornaments and Decoration; but in Medicine it is only made use of for its Oil, which serves for the same Purposes as that of the other.

As to the Choice of it, it is sufficient to be of a shining Black, as the Proverb bespeaks it.

Gagates, in *French*, *Gest*, *Jays*, or *Lemery*. *Jayet*, and in *English*, *Jet*, is a bituminous Stone, that is hard, black, and smooth, found in several Parts of *Europe*, as *Germany*, *Sweden*, *Provence*, and *Ireland*, in the Stone Quarries amongst the Rocks; it yields a good deal of Oil, and a little volatile penetrating Salt.

Some People are of opinion that *Jet* is an *Amber* whose volatile Parts have been separated by the subterranean Fires, and become what we call *Petroleum*. Chuse such as is neat, hard, and of a fine shining Black; it discusses, is emollient, expels Wind, and allays Vapours. The Dose from a Scruple to a Drachm. The Name comes from *Gaga*; a River and City of *Lycia*, from whence *Jet* is sometimes brought.

[*Jet* is the *Lapis Gagates*, *Charlt. Foss.* 14. *Gagates*, *Worm.* 31. *Aldr. Mus. Met.* 418. It is a crustaceous and almost stony fossil Substance, much like the Cannal Coal in Appearance, but differing from it, in that it has a bituminous Smell, is harder, and burns almost like Pitch, sending out a thick black Smoke. It had its Name, *Gagates*, from *Gage* or *Gagis*, a Town in *Lycia*, from which it used to be brought, but is now too common to need sending so far for.]

Of Jews Pitch.

Pomet. **T**HE *Jews Pitch*, or *Asphaltum*, is a *Bitumen*, solid, brittle, and black, something resembling black Pitch, inflammable and sulphureous, found swimming upon the Waters of the Lake where heretofore stood the Cities of *Sodom* and *Gomorrhah*, called the *Dead Sea*, or *Lacus Asphaltites* (from whence also it has its Name of *Asphaltum*) the Word *Asphaltites* signifies the Lake of Assurance, being so very strong, that every thing almost swims that is thrown into it; and it is called *Mare Mortuum*, or the *Dead Sea*, because no Fish or other Beast can live in it, through the extreme Saltiness, Bitterness, and noysome Smell of its Waters; but, in Recompence, there are great Quantities of this *Bitumen* found floating thereup-

on like Grease or Fat, of which the Coasters, who are *Arabs*, make very considerable Advantage; it being what they used to lay upon and besmear their Ships and Boats with, as the Northern Nations do with common Pitch: And one Thing is very remarkable, that when this Lake is very full of this *Bitumen*, there arises such a Stench in the Air, that the Inhabitants thereabout are necessitated to gather it and put it ashore; and so noysome at that Time is the Smell, that all Birds that fly over it fall down dead; and this is the Reason why the People in the neighbouring Places are so short lived.

The *Bitumen* of *Judaea*, or *Asphaltum*, so much resembles the best black *Stockholm Pitch*, that were it not for the strong Smell of Pitch, and that it is not so hard as the *Asphaltum*, no one could distinguish the one from the other.

The principal Use of this *Bitumen* is to make the fine shining Blacks of *China*: It is also of some Use in Medicine, for that it enters the Composition of the *Venice Treacle*; for which Purpose it needs no other Preparation than to be true or genuine, that is to say, of a most beautiful, shining, polished Black, reflecting the Image of the Sun, and of no manner of Smell: See that it be not adulterated, or mixed with *Black Pitch*, which is what is called the *Artificial* or *Fætitious Pissasphaltum*; it is no difficult matter to discover this artificial *Bitumen*, being of a very base Black, and a strong Smell. It is a Mistake to believe, as some Authors do, particularly Monsieur *Furitiere*, that we have no *Bitumen* of *Judaea* brought us now-a-days; and that the Apothecaries, instead of it, sell a Composition which they make of *Pitch* and the *Oil* of *Petre*; a thing that does not stand to Reason, nor can I conceive Apothecaries to be such Knaves and Fools to do any such thing, since the true *Bitumen* is reasonable enough in its Price: So that it would have been better for these Scriblers, and all such as have undertaken to write of Drugs without understanding them well, to have been silent; for they have made, and still do make, horrid Blunders about *quid pro quo*, or in substituting succedaneous Drugs or Medicines; which is a Matter that much concerns the King and Commonwealth.

Bitumen Judaicum, *Bitumen Babylonicum*, *Asphaltus*, is a solid, brittle, *Lemery.* black Matter, resembling *Black Pitch*, that is sulphureous and inflammable, and in burning sends forth a strong disagreeable Smell: It is found swimming upon the Surface of the Lake, or *Asphaltite Sea*, otherwise called the *Dead Sea*, where stood some time the Cities of *Sodom* and *Gomorrhah*. This *Bitumen* is cast up from time to time, in the Nature of liquid Pitch, from the Earth that

that lies under this Sea, and being thrown upon the Water, it swims like other fatty Bodies, and is condensed by little and little through the Heat of the Sun and the Salt that is in it.

The Inhabitants of the Country are constrained to take it from thence and carry it ashore, not only because it brings them Profit, but also because the Lake being too much loaded with this *Bitumen*, yields a stinking and malignant Smell, which spoils the Air, affects their Health, and shortens their Days: The Birds that fly a-crofs it fall down dead; and it is called the *Dead Sea*, because of the Stench, Bitterness, and excessive Saltiness of it; so that neither Fish or any other Creature can live upon it. The *Arabs* use this *Bitumen* of *Judæa* to pitch their Ships as we do common Pitch, and there was a great deal of it employed in the Embalming of the Antients.

Chuse such as is clean, of a fine shining Black, solid, and harder than Pitch, having no Smell but when it is held to the Fire; take Care it be not mixed with Pitch, which may be known by the Smell: They use this to make your fine shining Blacks of *China*. It yields a good deal of Sulphur, partly exalted with volatile Salt and a little Earth; it fortifies, and resists Putrefaction, resolves, attenuates, and cleanses cicatrized Wounds, and is used externally and internally.

It is supposed that the Word *Bitumen* comes from the *Greek* Word *πίτυς*, which signifies a *Pine*, and which has been changed by Corruption, the π being altered into a β , from whence they pronounced it *Bitumen*, instead of *Pitumen*: This Etymology is taken from the Opinions of the Antients, that the *Bitumen* of *Judæa* was a Pitch that flowed from Pines, and several other Trees about the Lake of *Sodom*: So were the *Jews* of that Opinion before: The Prophet *Esfdras*, speaking of *Sodom* and *Gomrrah*, says, that the Earth is founded upon Pitch and Heaps of Ashes.

[*Jews Pitch* is the *Bitumen Judaicum*, *Worm.* 31. *Charlt. Foss.* 14. *Bitumen nigrum crassum*, *Kentm.* 21. *Bitumen Judaicum asphaltum*, *Mont. Ex.* 12. It is a *Bitumen* formed in the Bowels of the Earth: It is found in many Places; but the best is that swimming on the *Dead Sea*: And there is no question of its being thrown up into it by the Earth, since all the Hills there about are full of it, and Pieces of two Feet length are dug up black as Jet, and hard enough to bear polishing like Marble. *Herman* also found of it on an Island near the *Cape of Good Hope*.

Dioscorides directs us to make Choice of that which shines like Purple, and to reject what is black, as foul, and of no value. How far his Direction agrees with what we now receive of it, is

not easy to say, for it is always quite black, but when broken, and held to the Light, is of a reddish or Saffron Colour. It is at present very seldom seen in the Shops, and we are obliged to use the *Pissasphaltum* in its Place; but not the artificial *Pissasphaltum*, which is made of common Pitch, &c. but a genuine, mineral, bituminous Substance, named by our Author in the Chapter of *Naphtha* hereafter, called *Fossil Pitch*, the *Pissasphaltos Nativum*, *Schrod.* 4. 208. *Pissasphaltum*, *Worm. Mus.* 30. *Charlt. Foss.* 141. This is found in the *Campania* of *Rome*, oozing through the Crannies of the Rocks like Tar; as also in *Auvergne* in *France*, and about *Epidaurus* in *Morea*, where it is washed from the Mountains by the Rivers, and formed into black hard Glebes. Its Virtues are the same with those of the former, and it is what is almost constantly sold in its Place.]

4. Of Pit Coal.

EARTH, or *Pit Coal*, is a sort of stony *Pomet. Bitumen*; it is chiefly used by Farriers and other sorts of Smiths to heat their Iron. That of *England* is esteemed the best, though there are some that say ours of *Auvergne* comes very little behind it; it is made a great Traffick, being a Commodity much used in *France*; the best is pretended to be that which is most void of Sulphur, and consequently that which will keep longest in the Fire. Some will have it that this Stone Coal is the Result of *Petroleum* made in the Bowels of the Earth, which is probable enough; since out of it may be drawn an Oil altogether like the Oil of *Petre*.

It is called in *Greek*, *Lithanthrax*; in *Latin*, *Carbo Petræ*, or *Carbo Fossilis*; *Lemery.* and in *English*, *Coal*; and is distinguished into *Sea Coal*, and *Pit Coal*, only upon the Account of that which is generally carried by Sea; all Coal being, properly speaking, *Pit Coal*; it is chiefly found in *England*, *Scotland*, *Ireland*, *Germany*, &c. and is an impure Sulphur, mixed with many gross and earthy Parts, and a volatile Salt, being strong, friable, and black: In Distillation it yields an acid Spirit, reddish Oil, black Balsam, and volatile Salt, like Amber; as is but too well known to the Chymists of this Age, who adulterate with it most of the Preparations of their Shops, that are either chargeable or troublesome and tedious in the Operation. The Virtues of this are in a lower Degree like those of Amber, as well internally as externally applied.

[*Coal* is the *Lithanthrax*, *Alerf. Pin.* *Carbo Fossilis sive Lithanthrax*, *Worm.* 31. It is drying and detergent, and is much oftener used in Medicine

dicine than the Physician imagines. *Lemery* has justly observed the villainous Tricks played within in Adulterations by the Chymists; and those of our Nation are not at all inferior to the *French* in Inventions of that kind.]

5. Of Terra Ampelites, or Kennel Coal.

Pomet. **T**ERRA Ampelites, or Kennel Coal, is a dry Bitumen, impregnated with Sulphur, that easily splits into Scales, and is reduced to Powder; it is found in the Entrails of the Earth in many Places of *France*. We have two sorts of it, the one soft, the other hard, which comes from near *Alençon*, in the Province of *Maine*; the Property of the Quarry whence it is taken belongs to a Curate of a Parish, who makes Seven or Eight hundred Livres per Annum of it. The Quarry is forty or fifty Feet deep; and though this is a Merchandize of low Price, yet they make a good Trade of it; there hardly being any Artificers in Stone or Wood, but what make use of it more or less. That which is good must be lately taken from the Mine, for when it is stale and old, it resolves into a Powder, and becomes a Saltpetre; it ought to be light, neither too soft nor too hard. Some have given it the Name of *Vine Earth*, because it kills or drives away the Worms from the Vines. Also it is called *Pharmacitis*, because it is used in Medicines.

Ampelitis, sive Pharmacitis, the Black *Lemery*. Stone, or medicinal Earth, is a very bituminous Stone, black as Jet, splitting into Scales, and is easily reduced to Powder. They get it from a Quarry near *Alençon* in *France*. There are two sorts of it, one soft and the other hard; it affords Abundance of Sulphur and Salt; it is proper to kill Worms, applied to the Belly, and to dye the Hair black. Some use it to destroy Vermin at the Vine Roots.

[*Cannal* or *Kennel Coal*, is the *Lapis Ampelitis Galeno*, *Charlt. Foss.* 14. *Succinum Nigrum, Schwenk, Cut. Foss.* 394. *Terra Ampelitis, Worm.* 31. *Terra Ampelitis sive Pharmacitis, qua medicantur, Kestm.* 3. It is a Detergent, and good in malignant Ulcers, but not much used in Medicine; near the Places where it is dug in *England*, they turn it into Toys, &c. which are beautiful, and bear a very fine Polish.]

6. Of Sulphur Vivum, or Native Sulphur.

Pomet. **S**ULPHUR *Vivum* is a bituminous Earth or Clay easily inflammable, that in burning emits a sulphureous Smell; it is brought us from *Sicily*, *Italy*, and other Places. As to the

Choice of Live Sulphur, so called because it is sold and made use of just as it comes out of the Earth, let it be tender or soft, friable, easy to be broken, smooth, shining without as well as within, and of a sort of Mouse Dun, or Grey; as free from Gravel and Dust as possible.

This sort of Sulphur is in Use for some particular Operations, and certain Galenical Compositions, and pretty much used by Vintners, who mix it with Sugar, *Anis*, Cinnamon, Nutmeg, Cloves, &c. to sweeten and preserve their Vessels.

Apothecaries also use it to correct *Scammony* by the Fume of it.

7. Of Mineral Sulphur.

SULPHUR Mineral is a hard earthy Bitumen, of a yellow Colour, and bright enough, of a foetid sulphureous Smell; easy to be melted or burnt, and is more or less beautiful, as it is more or less mixt with Impurities it meets with in the Mine.

This Mineral Sulphur comes from Mount *Vesuvius*; as to the Choice of it, though indeed it is made but very little Use of, let it be in handsome Lumps, of a golden Yellow, bright and shining, and as little as may be mixed with Earth or other Filth.

Its Uses and Qualities are no other than like those of the common factitious Brimstone that is made of this, which we are going to speak of under the next Head.

Of Sulphur in Rolls, or Common Brimstone.

The common factitious Sulphur or *Pomet*. Brimstone, is made of yellow Mineral Sulphur melted, and by the Assistance of right Train Oil and Moulds; cast into the Form in which we see it.

This Sulphur is more or less beautiful, and endowed with good Qualities, according the Degree of its Purification, and the Places where it is made; for that of *Holland* is much better, and more beautiful than that of *Venice*, or that of *Marseilles*, the three Places whence it comes, and where it is made: The Gentlemen of the *Royal Arsenal*, indeed, manufacture great Quantities, but they make use of it all themselves.

In your Choice of this factitious Sulphur, or Brimstone, take such as comes from *Holland*, in large thick Rolls, of a golden Yellow, light, easy to break, and being held close, or grasped in the Hand, and applied to the Ear, crackles and makes a Noise, and at length breaks to Pieces, and being broken, appears as it were in Crystals, which are

the true Marks of that of *Holland* and *Venice*; none of which are to be found in the *Marfeilles* Sulphur, it being little better than a grey sort of Earth of late; however, since we could have none from *Holland*, they have learnt the Art of well-working it there; and I think it has been our own Fault that we have suffered other Nations so long to run away with the Profit of refining it as it ought to be. The Reason has been, that no Merchants have undertaken to write of it, or enquire into the Manner of doing it; only a few Physicians, and some Apothecaries and others that have travelled, but understood nothing of the Mystery of Trade, have set Pen to Paper concerning it, who acquit themselves but indifferently, when they tell us that ordinary Sulphur in Rolls, or common Brimstone, is made of *Sulphur Vive*; for that would be to turn Pewter into Lead, since the latter, though natural, is more valuable, that is, will sell dearer than the former, notwithstanding it be wrought; however, I would not be thought to discourage Authors, few Books being so ill written, but may contribute, in some Measure, to the Advancement of Knowledge; only in general it may be said, that the Subject one is going to treat of, ought to be understood before we begin to write.

There are several other artificial Sulphurs, as I have already taken Notice, proceeding only from the different Preparations of different Countries; as the ordinary Sulphur of *Marfeilles* is in small Rolls, and the green Sulphur of the same Place, both in large and small Rolls, which sort is esteemed the best for Distillation, as shall be shewn hereafter.

There are a great many other natural Sulphurs, besides the two sorts we ordinarily make use of, but they are not very common with us, because they come from a great Way off, and we have them not in large Quantities.

The first and most desirable is that of *Quitto*, of a golden Colour, and an Amber Figure, found in great Abundance near the Gold Mines.

A second sort is that of *Nicaragua*, which is in a yellowish grey Mass, altogether like that which was found, some Years since, in that Bank of Earth which was levelled by *St. Martin's Gate* in *Paris*.

A third sort is of *Switzerland*, resembling that of *Quitto*; and many more there are which I shall forbear to mention, there being no Demand for them.

The Use of Sulphur in Rolls, or common Brimstone, is well known to all, and that it is one of the chief Ingredients of Gunpowder; for which Reason, those that sell great Quantities of it to

the *Arsenal*, for that Purpose, ought to discover it when it is faulty, that what is made of it may not fall short of Expectation. This Sulphur is used too in whitening Gauzes, Stockings, &c. for nothing blanches any Thing of Woollen like the Fume or Vapours of Sulphur.

It is also of considerable Use in Medicine, as well in many Prescripts, as to perform a great many Operations in Chymistry, as will be seen hereafter.

It is besides a Specifick in the Itch; but Care ought to be used, for it now and then produces very ill Symptoms.

Sulphur or *Brimstone*, is brought to us from the *Caribbee* Islands of the *West-Indies*, and is found also in *Italy*, *Bohemia*, *Sicilia*, and *Melos*, being generated of the Fat and Resin of the Earth, filled with an acid and vitriolick Spirit. It is twofold, *viz.* Natural and Artificial. The Roll Sulphur is the latter; but if you would make right Oil of Sulphur, you must chuse the *Natural*, or *Sulphur Vivum*; but if that cannot be got; you must make use of the other, which yet you are to try, whether it easily inflames and burns constantly; if not, it is not good, but is impure and adulterated with Resin, and such like Matters, whereby it becomes harder to kindle, and is easily extinguished, being *Cabal-line Sulphur*.

It is a noble Mineral even before Preparation; and is generally appropriated to the Breast and Lungs, and to cure all Diseases which disturb the same; it kills Worms, opens, cuts, resists Putrefaction and Poison, provokes Sweat; and is given in Coughs, Colds, Phthificks, Wheefings, Shortness of Breath, &c. Outwardly applied it resolves all hard Tumours, cures corroding Tetters, Scabs, Itch, Scurf, Morpew, &c. dries up old Sores and Ulcers. Though this being finely ground, is sometimes used internally, yet the Flowers are more commonly used, as being a Sulphur opened and purified from all Filth, whereby it is fitter for all internal as well as external Uses.

Of Flowers of Sulphur.

Flowers of Sulphur are prepared of *Sulphur* burned in Pots made for the Purpose, and so reduced into *Flowers* as we see. The best and most beautiful *Flower* of Sulphur comes from *Holland*; but of late, since it has been made at *Marfeilles*, *Roan*, and *Paris*, we have little thence. The true *Holland's Flowers* of Sulphur were wont to be brought us in Cakes that were light, soft, friable, and rather white than yellow; but through Avarice and the present Wars, there.

there is no such now; and the best that we have at present is from *Marseilles*, which, though very good, does not come near that I have mentioned of *Holland*; it ought to be in an extraordinary fine impalpable Powder, of a bright Yellow, and of an agreeable Taste.

The third sort is that of *Roan*. This usually is of a whitish Yellow, made up of Sulphur raised by a violent Fire, and Meal or Wheat Flower, or fine powdered Starch, added to it, which is all a Cheat. In like Manner is that which is generally hawked about, made of the Powder of *Holland* Sulphur beaten, and passed through a very fine Taffety or Silk Searce; but the Cheat is easily discovered by the low Price this spurious Stuff is sold at.

Upon the whole, *Holland's* Flowers of Sulphur are preferable to any other; next to them those of *Marseilles*; and these are the only two that ought to be given internally.

The true Flowers of Sulphur are natural Balsam for the Lungs, and endowed with so many good Qualities, that it would be endless to recount them all.

Flower of Sulphur is also made after another Manner, to wit, by adding to it fixed Salt-petre, or *Sal Polychrestum*, which is the Method we use to make it white; but there being little Demand for this sort, it is seldom made, though it be a very good Medicine, and more agreeable to take than the abovementioned.

To make Flowers of Sulphur, take *Lemery*. Sulphur grossly powdered, half a Pound; put it into a Glass Body, or Cucurbit; place it in a small open Fire, and cover it with another Glass Body, or earthen Cucurbit; turn the bottom upwards, so as that the Neck of the lower may enter into the Neck of the upper; change the upper Cucurbit every half Hour, fitting another in its Place; adding likewise, new or fresh Sulphur; the elevated Flowers sweep together with a Hare's Foot, and continue to do thus so long till you have what you desire. These Flowers are good against Diseases of the Lungs; Dose ten or twelve Grains in any fit Syrup, Pulp, or Electuary; outwardly you may mix them with Hog's Lard, for Scurf, Tetters, and the Itch; but be cautious of using it to Infants, especially anoint not any where upon the Trunk of the Body, and especially the Belly. If your Sulphur be sublimed with *Sal Polychrest*, you will have white Flowers.

Of Salt of Sulphur.

Pomet. The Salt of Sulphur is made several Ways, but the best and easiest is according to Monsieur *Charas's Pharmacopœia*, p. 887.

whither the Reader may have Recourse. This Salt is composed of Salt-petre refined, and Spirit of Sulphur, reduced by means of a Retort with a Sand Heat, into a white Mass, which has many good Qualities; or it may be made with the *Sal Polychrest*, or otherwise, as may be seen in Abundance of chymical Books which treat of it.

Salt of Sulphur is much in Use to temper and allay the Heat of Fevers; the Dose is not adjusted, but it is sufficient to give it in any common Drink to an agreeable Acidity.

What Form one pleases may be given to this Salt; some have it in a Mass, others in Crystals; some granulated, and others in Powder, or, finally, in Rolls; which last is a curious Method, and known but by few.

Of Magistery, or Milk of Sulphur.

The *Magistery*, or *Milk*, as it is called, *Pomet*. of Sulphur, is made of the Flowers of Sulphur, and Salt of Tartar boiled in Water; adding distilled Vinegar to precipitate a Powder, which when dried will be white, and is esteemed very good for the Lungs, and for Asthmatick Persons.

If half a Pound of Flowers of Sulphur *Lemery*. be mixed with a Pound and an half of Salt of Tartar, or Pot-ashes, and be boiled in two Gallons of Water for six or seven Hours, the Sulphur will be all dissolved, and the Liquor become red: This filtered and mixed by little and little with Spirit of Vinegar, or some other Acid, presently becomes white like Milk. Let it stand to settle, and a white Powder will precipitate, which being edulcorated by five or six Times washing in hot Water, and dried, is the *Lac Sulphuris*, which is better than the Flowers for all the Diseases aforementioned, given from six Grains to fifteen. This is powerful against all Manner of Catarrhs and Fluxes of Rheum from the Head that fall upon the Throats and Lungs; for it consumes and dries up all ferous and watry Superfluities.

Of Spirit of Sulphur.

Spirit of Sulphur is a Liquor drawn *Pomet*. from the green Sulphur, by the Assistance of Fire and certain Vessels, as Messieurs *Charas*, *Lemery*, &c. teach us; and as it is of different Colours, according as it is more or less divested of its Phlegm, so it has two different Names assigned it: That which is just as it comes out of the Vessels is called Spirit of Sulphur, which when good ought to be as clear as Rock Water, and of an agreeable Acidity, and which put upon blue Paper, will

will turn it red; but the best and surest Proof is to deal with honest Men for it.

The second sort, to which improperly the Appellation of Oil of Sulphur has been given, is the former separated from its Phlegm or superfluous Humidity, and which has a bright Yellow, or golden Colour, and is so very strong that it cannot be endured upon the Tongue.

Some Hawkers counterfeit Spirit of Sulphur by a Mixture of Vinegar and Spirit, or rather Phlegm of Vitriol, or with Water, adding a few Drops of *Aqua fortis*, and sell it to abundance of People, especially to Vintners, who use a great Quantity of it upon some Occasions.

Great Virtues are attributed to the Spirit and Oil of Sulphur in Fevers and pulmonary Cases especially.

Not long since it has been discovered, that Spirit, or rather the Oil of Sulphur, is the only Thing to give Lustre to the *Peridot*, as will be seen where we treat of precious Stones; and also to fix the Colour of the Everlasting Flowers, as we call them.

Of Balsam of Sulphur.

Balsam of Sulphur is made two Ways; *First*, with the green or expressed Oil of Anniseed, and the best Flowers of Sulphur, melted or dissolved together; which is called *Balsam of Sulphur* annisated, and has great Qualities ascribed to it, as will be seen hereafter.

Monsieur *Charas* says, in his Book, p. 470. that some are of opinion this Balsam is in Quality but little behind the *Natural Balsam*, or *Balm of Gilead*, because it heats and dries moderately, and resists Corruption or Putrefaction; it therefore is a celebrated Medicine in pectoral Cases, being very beneficial in Coughs, Asthmas, Pleurifies, and Ulcers of the Lungs. It is good also against Weaknesses and Indigestions of the Stomach, restores the Appetite, expels Wind, eases all sorts of Cholicks. It is said to be good also against the Plague, and all epidemical Diseases, venereal Effects, continual or intermitting Fevers, and the Epilepsy. It may be taken internally, and from three to ten or twelve Drops; and the Stomach or Navel may be anointed therewith in any Illness of the former Kinds, or in Cholicks, &c.

The distilled or chymical Oil of Anniseed might be made use of for this Composition, were it not that in the Operation it is apt to evaporate and fly off, do what you can, more than the green or expressed Oil.

The second Way or Method of making it, is with Oil of Walnuts cold drawn, and Flowers of Sulphur, mixed together, which, by the Assistance

of the Fire, is made into a Balsam very good to digest, discuss, or resolve any crude Fluxion impacted in any Part of the Body, made use of by way of Unction: It is also the Basis of *Emp. Sulphuris*.

Some use Oil of Sweet Almonds, white Poppy Seed, or Turpentine, instead of Oil of Walnuts, in the Composition of this Balsam, in which every one may do as seems best to him.

Some again add to this Balsam, Myrrh, Aloes, Saffron, and the like.

Besides the Sulphurs afore-mentioned, we have a sort of Earth or yellow Stone, which Mount *Ætna* sends forth, called by us *Naples Yellow*, which Painters make use of; but this sort of Earth is scarce amongst us: The Marks of its Goodness are, that it be sandy, and of as high a Colour as may be. This Earth is nothing but a Sulphur hardened by the Fire in the Bowels of the Earth, which makes it dry and brittle.

You may make a Balsam of Sulphur in a small time, by taking to one Part *Lemery*. of Flowers of Sulphur four or five times as much good Oil of Turpentine, Oil Olive, or the like, and boiling them in a Pipkin, so big, as it may be but half full, till the Flowers are perfectly dissolved into a blood-red Balsam; let the Fire be pretty quick, yet not too quick, and continually stir it all the while it is making, till it is cold, otherwise the Flowers will be apt to coagulate into a Mass, and so you will have no Balsam. It is good against Coughs, Colds, Asthmas, Consumptions, &c. outwardly applied, and is taken inwardly from four Drops to twenty.

[*Sulphur* is of various Kinds; the general Distinction is into Native and Fictitious, of both which Kinds there are a great Number of Species, differing in Colour, Texture, and, in the latter sort, Manner of Preparation.

The different sorts usually kept in the Shops are four, the *Sulphur Vive*, the *Pure Sulphur*, the *Crablike Sulphur*, and the common Roll Brimstone.

The *native Sulphur*, or *Sulphur vive*, is the *Sulphur nativum*, *Schrad.* 501. *Sulphur nativum seu vivum*, *Charlt. Foss.* 12. *Sulphur fessile seu vivum & nativum*, *Worm.* 26. This is of various Kinds, but what is commonly found in the Shops is either pellucid and yellow, brought from *Peru*, *Switzerland*, &c. or opaque, greenish, yellowish, or greyish and like Clay, dug up near the burning Mountains and sulphureous Springs in many Places. This last, though not so pure or valuable, is the common kind sold in the Shops.

The *pure Sulphur* is the *Sulphur factitium*, *Worm.* 26. *Aldr. Mus. Met.* 364. *Charlt. Foss.* 12. This also is of many Kinds, and prepared in many different Manners: In some Places it is obtained,

tained by boiling sulphureous Waters, as at *Buda* in *Hungary*; in others, by a kind of Sublimation from the sulphureous Earth, as in *Italy* and many other Places; and in others, it is extracted from a kind of Pyrites by the Help of Fire, as about *Liege*, &c. it is then melted and formed into Cakes, or else thrown into hollow Cylinders of Iron, rubbed over with Oil on the Inside, and so formed into Rolls. This is the true factitious pure Sulphur to be used in Medicine, and is either yellow or greenish; the last is proper for many chymical Preparations, as containing the greatest Quantity of vitriolick Salt.

The *Caballine* or *Horse Sulphur*, is the *Sulphur Caballinum factitium*, *Kent.* 9. *Sulphur nigrum Caballinum*, *Worm.* 28. *Charlt. Foss.* 12. It is the the Fœces of the other Sulphurs, mixed with Steel Dust, or the Squammæ that fly off from Iron in the hammering, and sometimes formed into Cakes without any Mixture at all.

The last sort, or common Roll Brimstone, is usually a Mixture of Sulphur and common Resin, cast into Moulds. This is what is generally sold by Grocers and the petty Druggists, but ought never to be used in Medicine.]

8. Of Naphtha, or the Slimy Bitumen.

Pomet. **N**aphtha is a Bitumen or Slime, found in many Places of *Europe*: The Name of *Maltha* was given first to a sort of Bitumen found near *Comagene* in *Syria*. *Pliny* tells us, that this Bitumen is so glutinous, that it sticks to whatever it touches, from whence comes its Name of *Maltha*; and accordingly he relates some strange Stories of it, as that at the Siege of *Samozata*, which *Lucullus* undertook, it was of great Advantage to those in the Town; for that as soon as it touched any of the Soldiers at whom they threw it, it set them on fire in such sort as could not be extinguished without throwing Earth upon them, being of the Nature of other Bitumens, which the more you cast Water upon them, the more they blaze. There is another sort of Bitumen found near *Ragusa*, which has the Smell of, and serves for the same Purposes as common Pitch, and therefore has the Name of *Maltha*, or *Natural Pissasphaltum*, or *Earth Pitch*, bestowed upon it: But these two sorts being unknown to us, and we having none of them in *France*, I shall content myself to speak of that of *Auvergne* only.

The Bitumen then of *Auvergne* is a sort of Pitch, of a disagreeable Smell, found between *Clermont*, *Mont-ferrant*, and *Rion*, in a Place called *Pege-wells*, where it is in such abundance, that it makes its way out of the Earth, and causes a great deal of Uneasiness to Passengers, who when

they tread on it can hardly draw up their Feet, it is so sticking, and who, by reason thereof, are are often forced to leave their Shoes behind them. It is this famous Drug the *Hucksters* dry, and then sell to ignorant Apothecaries, and others, instead of the true Bitumen of *Judæa*, though it be easily distinguishable from it by its strong Smell. whereas the true *Judæa Bitumen* is almost without any Smell at all: It is from its foetid Smell, some, as to *Assa Fœtida*, have given it the Name of *Stercus Diaboli*, or *Devil's-Dung*. There are also many other sorts of Bitumen, that come from the Bowels of the Earth; but we having no Commerce in them, as having none of them, I shall not trouble myself to speak any thing about them.

[What our Author has described here under the Name of *Naphtha*, are several different Kinds of the *Pissasphaltum*, which I have already mentioned in the Chapter of *Bitumen Judaicum*: The true *Naphtha* is a more fluid Bitumen, and nearer approaching the Nature of *Petroleum*, but not absolutely the same with it, as some have judged; it is the *Naphtha Alba & Nigra*, *Kœmp. Amœn. Ex.* 274. *Napheba*, *Worm.* 30. *Aldrov. Mus. Met.* 388. *Pharmacum Medæ quibusdam*. It is not to be found in the Shops, but stands recorded for its inflammable Qualities.

The *Maltha* of the Antients was a Mixture of this, and an argillaceous Earth, which together made a kind of Cement, used as Mortar in Building; and, according to *Vitruvius*, this was the Mortar used in building the Walls of *Babylon*.]

9. Of Naphtha of Italy.

THE *Naphtha* of *Italy* is an Oil of different Colours, flowing principally from a Rock situate in the Valley of *Montferrin*, in the Dutchy of *Moldena*; and this Oil has been known to us but a few Years since, by the means of one *Roque Foura*, a Native and an Inhabitant of the Village called *Prut*, near *Briançon*, in the *Upper Dauphiné*, of whom I bought the different sorts of *Naphtha* that I have by me, and from whom I had the following Account.

The *Italian* or *Montferrin Naphtha*, comes from a Rock which is upon a Mountain, whither it is conveyed by subterranean Veins, and it is gathered in Oil of different Colours, by means of certain Canals and Cauldrons which separate it: The Duke of *Sara* and *Darce*, and the Marquis of *Arpia* in *Moldena*, to whom the aforesaid Rock belongs, have caused Trenches, and Copper Canals, or Pipes, to be made, which are purposely placed to receive the Oil as it distils from the Rock, by means of which it falls into the Cauldrons, from whence

whence it is taken for Use. It is observable, that this Oil changes Colour according as it is nearer or farther off from the direct Light of the Sun; so that that which is of the sunny Side is white, and clear as Water, and most esteemed, that next to it clear and red like Wine, the next yellow, afterwards green; and, in short, that which is at the other opposite Side of the Rock, quite off from the Sun, is black.

White *Naphtha*, which we commonly call Oil of *Petre*, or white Rock Oil, because of its Whiteness, Clearness, and Beauty, is immiscible with any Thing in the World besides, being lighter than whatsoever can be put to it, and consequently it will be uppermost; its strong piercing Smell comes near that of Sulphur, which renders it extremely volatile. It is easy to catch Fire, which may serve as a Precaution to those who sell it, to be as careful of it as of Gun-powder.

The great Virtue of this Oil is the Reason why I will not say any Thing of it here, but rather refer my Reader to what the aforementioned *Roque Faura* has printed concerning it. As for the red, yellow, and green *Naphtha*, they are so little in Use, that we do not see any of them at all: And moreover, another Reason for it may be, that the *Italians* mix them with the black Oil before they send it to us; and this makes the Oil of *Petre*, which we have thence, instead of being black and thick, as it comes out of the Rock, to be red, transparent, and yellowish, and moderately sulphureous in its Smell. And as this Oil is pretty dear, some counterfeit it, as will be seen in the next Chapter.

Naphtha, *Pissasphaltum Naturale*, is *Lemery*. a kind of soft or liquid *Bitumen*, of different Colours, very inflammable, which is brought from several Parts; as the Place where ancient *Babylon* stood, and about *Ragusa*; likewise from a certain Lake or Marsh of *Samofata*, and divers other Parts. But we have now no other *Naphtha* brought but what comes from *France* and *Italy*; the last of which is a sort of *Petroleum*, or clear Oil, that is sometimes white, sometimes red, sometimes yellow, sometimes green, and sometimes black. It flows from a Rock situate on a Mountain near *Montfestin*, in the Dutchy of *Modena*. The white is most valued. The *Bitumens* called *Naphtha* are almost all Sulphur or Oil mixed with some acid and volatile Salt. They are incisive, penetrating, deterfive, digestive, vulnerary, and strengthening, and so are prevalent against Palsies, Weakness, and Relaxation of the Nerves. Outwardly applied they relieve the Tooth-ach; and dissolved in a Turpentine, or vinous Clyster, prevail against Dysentery

and *Diarrhœa*. *Petroleum* is by many used instead thereof.

[The *Naphtha* of *Italy* is a kind of *Petroleum*, the *Petroleum flavum*, *sive Italicum*, *Ind. Med.* 90. It is particularly plentiful about *Frumetto*, where the Inhabitants dig Wells of thirty or forty Feet Depth, till the oily Spring is found, and there it is always mixed with Water. The Wells dug at the Foot of the Hill, furnish a large Quantity of very red Oil; those near the top a white, but in much smaller Quantities, but which is most esteemed, and is what they particularly call the *Naphtha*: There is also a Rock in the same Country, near the *Apennine* Mountains, where there is a considerable Spring of Water which runs perpetually; on which there swims a yellow Oil of of this kind in very large Quantities, insomuch, that it is usually gathered twice a Week by many Pounds at a Time.]

10. Of the black Oil of *Petre*, or Oil of *Gabian*.

THE *Petroleum*, or black Oil of *Gabian*, is a liquid *Bitumen*, that comes from the Bowels of the Earth, and by subterranean Channels is thrown upon the Waters of a small River, near a Village called *Gabian*, in the Bishoprick of *Bezier* in *Languedoc*. Formerly this Oil was so plentiful and common, that it was made but little Account of; for considerable Quantities might be gathered of it daily: But now *Mondays* are only set apart for that Purpose; and the Place where it is, is enclosed with a Wall, and guarded by a Man. And I have been told at *Gabian*, that the Bishop makes a great Profit of it, which notwithstanding is not so great as it was heretofore.

This Oil ought to be of a middle Consistence, of a strong stinking Smell, and of Colour black.

In the Choice of it, one must see that it be not Oil of Turpentine, thickened and coloured with black Pitch. The best Way is to buy it of honest reputable Merchants, that would not do an ill Thing, and sell one Thing for another, and not to expect it at an under Price.

The black Oil of *Petre* of *Italy*, or of *Gabian*, is somewhat in Use in Physick, but chiefly employed by Farriers, and those that make artificial Fire-works.

There are moreover other sorts of Oil of *Petre*, or *Bitumens*, found in many Parts of the World, as those of *Clao*, of *Surinam*, and *Copal*; but since we have none of them, nor any Trade or Dealing in them, I will not pretend to say any Thing concerning them.

Petroleum,

Petroleum, sive Oleum Petreæ, or Lemery. Rock Oil, is a kind of *Naphtha*, or bituminous Liquor, that flows from the Clefts of several Rocks, Stones, and Quarries, in many Parts of *Italy, Sicily, and Languedoc*. It is brought of several Colours; as black, red, white, and yellow. The black *Petroleum*, usually brought us from a Village in *Languedoc*, called *Gabian*, and from thence Oil of *Gabian*, is of a very unpleasant Smell. All the Kinds of *Petroleum* are incisive, penetrating, resolute, attenuating, resist Poison, destroy Worms, expel Wind, strengthen the Nerves. Some Drops may be taken inwardly and outwardly, the Joints, Emunctories, and Navel, may be rubbed with it.

It is hot and dry, and of thin Parts, and is of admirable Use against Aches and Pains, and all cold Distempers of the Muscles, Nerves, and Joints. It is prevalent against Gout, Palsies, Cramps, Convulsions, Apoplexy, Megrim, and other cold Diseases of the Head and Brain. Anointed upon the Region of the *Abdomen*, Bladder, Reins, Spleen, or Womb, it gives Ease to all Pains and other Disorders of those Parts, dissolves Swellings, &c. It is said to cure ulcerated Kibes and Chilblains, to help Bruises, and heal old Sores; and is of singular Use against the Rheumatism, or running Gout. Some say that that which comes out of *India* is the best and pleasantest, and is thought to have all the Virtues of the *Naphtha* aforegoing.

[Oil of *Petre* is the *Bitumen Liquidum oleo simile quod innatat lacubus, Kentm. 20. Petroleum, Worm. 30. Charlt. Foss. 14. Petroleum Rubrum sive Gabianum, Ind. Med. 90.* It is found in many Countries, particularly in *Italy*, as also in great Plenty in *Britanny*, near *Beriers*, where it flows, mixed with Water, from the Cracks of the Rocks.

It easily takes Fire, and is in many Places burned in Lamps, instead of common Oil. In Medicine it is attenuant and resolvent, good in hysterick Cases, given inwardly from ten to thirty Drops; and in Palsies externally used as a Liniment. We have little of it genuine in *England*; our Chymists having learnt a Way of adulterating it with the Oil of the cheapest of all *Bitumens*, the common Coal.]

11. Of China, or Indian Ink.

Pomet. CHINA Ink is a hard solid Paste, which, according to some Authors, the *Chinese* make of a black bituminous Earth, which they powder, and with Gum *Tragacanth* form into a Paste, which they after make into little Sticks, and having marked them with some *Chinese* Characters, they dry and sell them as we have

them. Others will maintain that it is made of a Black produced from the Smoak of Oil of Olives burnt; but as it is impossible I should be able to determine of which it is composed, I will only remark, in the Choice of it, that the true genuine Ink of *China* is to be preferred to that of *Holland*, and is distinguishable from it, in that it is in small square Cakes of the Thickness and Length of one's Finger, and of a very black jet Colour, whereas the *Holland* kind is in flat Lumps, and of a greyish Black.

China, or Indian Ink, serves for Maps. In short, it is very useful for all such as mark or take Sketches in Black, being a portable Ink.

[*Indian Ink* is a nice Mixture of a peculiar sort of Lamp Black, made by the burning fat Pork, and mixing its Soot into a Paste with the Solution of Gums.]

12. Of Gun-powder.

GUN-powder is a Composition of Salt-*Pomet.* petre, Sulphur, and Coal made with Willow, or any other light Wood, which by means of Vinegar, and a Sieve, or any other Instrument full of Holes, is made into Corns big or little, or what Size you please: But I will not enlarge upon this, the Manner of making it being very well known; and by the bye, I would not advise any Merchant to deal in this Commodity, whose professed Business it is not, it being too hazardous.

Sal Pyrium, Sal Bombardicum, and Pulvis Pyrius, and Bombardicus, or Gun-powder, was a thing wholly unknown to the antient *Greeks* and *Arabians*, and therefore they have no Name for it. It is made in many Parts of the World, but most plentifully in *France* and *England*, and is composed of Salt-petre, Sulphur, and Wood-coal.

You are to chuse good and pure Nitre, with fair and large Crystals or Shootings: If it be not good, you must purify it as we have before taught. This purified Nitre put into a Kettle, which set upon a Furnace with a moderate Fire, which gradually encrease to such a Degree of Heat, till it begins to smok and evaporate, lose its Humidity, and grow very white; keep continually stirring it with a Wooden or Iron Ladle, whereby its Greasiness will be taken away; then pour so much Water into the Kettle as will cover the Nitre; and when it is dissolved, and is brought to the Consistence of thick Liquor, then with a wooden Stick or Ladle, keep continually stirring it without any Intermission, till all its Humidity is again evaporated, and it be reduced to a most dry white Meal.

You ought also to chuse the purest and best Sulphur; that which is in very great large Lumps, clear,

clear, perfectly yellow, not very hard nor compact, but porous, nor too much shining, is the best. If when it is set on Fire, it freely burns all away, leaving little or no residant Matter, it is a Sign it is good. So also if you press it between two Iron Plates that are hot enough to make it run, if in running it appears yellow, and that which remains be of a reddish Colour, you may conclude it excellent, and fit for your Purpose; but if it be impure and foul, Powder-makers prepare it after this Manner. Melt your Sulphur in a large Iron Ladle or Pot, over a very gentle Fire of Coals well kindled, but not flaming, then scum off all that which riseth on the Top, and swims upon the Sulphur; presently after take it from the Fire, and strain it through a double Linen Cloth, letting it pass at leisure: so will the strained Sulphur be pure, which powder finely.

You ought also to chuse Charcoal large, clear, free from Knots, well burnt, and cleaving; but if you be where it is not to be had, you must make it after this Manner: Cut down your Wood when it is full of Sap, and is apt to peel, *viz.* in *May* or *June*, and chiefly Hazel, or Ash, or Juniper, &c. which cut into Lengths of two or three Feet long, of the Bigness of ordinary Billets, taking away the Rind and superfluous Branches. Being very dry, make them into Bundles, and in a plain even Place, fit for that Purpose, set them upright one by another, and one upon another, cover them with Earth or Turf very close, leaving only some few Vent-holes; then kindle the Fire, and when it is well lighted, and all in a red burning Heat, being reduced into burning Coals, stop up every Vent-hole for the Fire, close with moistened Earth, so that there be not the least Breathing-place. The Fire being thus extinguished, the Coals will be pure and whole, without any Ashes, and in twenty-four Hours after, you may take them out for Use. But for a present and small Occasion do thus: Cut the Wood into small Pieces, dry them well, put them into a large earthen Pot, cover it all over the Top well with Clay, then make a good Fire round the Pot, gentle at first, but so as it may be made red-hot; covering it also all over with Fire, leaving it so for the Space of an Hour or more in that strongest Heat; let the Pot cool of itself, and then take out the Coals for Use, which reduce into a fine Powder.

Of these Ingredients the Country People in the *Ukraine* in *Poland*, and the *Cossacks*, make it with their own Hands, thus: They put their Proportions of *Nitre*, *Sulphur*, and *Charcoal* (being all in fine Powder) all together in an earthen Pot, upon which they put fair Water, then they boil it upon the Fire till all is evaporated, and the Matter be-

comes thick like Paste, and taking it from the Fire they make it yet drier in the Sun, or in a Stove, or the like, till it is fit to corn; then they granulate it by passing it through a Hair Sieve, making the Grains of what Bigness they please; and this serves their rural Occasions, as well as if it had been made by the most skilful Artist in the World.

But in order to the truly knowing and making of Gun-powder, it is fit that you should first know the Kinds thereof, and then the different Strength of each. The Kinds are threefold; I. Cannon Powder; II. Musquet Powder; III. Pistol Powder; and of each of these there are two several Kinds, *viz.* a *stronger* and a *weaker*, all which Differences arise only from the various and differing *Proportions* of the above enumerated three Ingredients. The exact Limitations of which we come now immediately to declare.

	Cannon.	Musquet.	Pistol.	
Nitre	10.0	10.0	10.0	Strong.
Sulphur	2.5	1.8	1.2	
Coal	2.5	2.0	1.5	
Nitre	10.0	10.0	10.0	Weak.
Sulphur	2.0	1.5	1.0	
Coal	2.4	1.8	1.8	

The Preparations declared, I. Cannon Powder, 1. The Stronger. To every 100lb. of Salt-petre there is Sulphur 25lb. Charcoal 25lb. 2. The Weaker. To every 100lb. of Salt-petre, Sulphur 20lb. Charcoal 24lb. II. Musquet Powder. 1. Stronger. To Salt-petre 100lb. Sulphur 18lb. Charcoal 20lb. 2. The Weaker. To Salt-petre 100lb. Sulphur 15lb. Charcoal 18lb. III. Pistol Powder. 1. The Stronger. To Salt-petre 100lb. Sulphur 12lb. Charcoal 15lb. 2. The Weaker. To Salt-petre 100lb. Sulphur 10lb. Charcoal 18lb. as in the Table annexed, which are the Numbers, and in the same Proportion, but in lesser Quantities or Decimals.

The Way of making it. All these Ingredients are to be finely powdered, and they are to be moistened with fair Water or Vinegar, or Spirit of Wine, or Water and Spirit of Wine mixt together, or Urine, which is most usual; then let all be well beaten together for the Space of twenty-four Hours at least, and then granulated after the following Manner:

You must prepare a Sieve with a bottom of thick Parchment made full of round Holes, and the

the former beaten Mass must beforehand be moistened with the following Liquor. *R Spirit of Wine* ℥xx. *Spirit of Wine Vinegar*, ℥xij. *Spirit of Nitre*, ℥iiij. *Spirit of Sal Armoniack*, ℥ij. *Camphire*, ℥j. *dissolved in Spirit of Wine, mix together for the Purpose aforesaid.* Or instead thereof, if all these Things cannot be had, with this, *R Brandy*, xl. *Camphire* ℥j. *mix and dissolve*; the Mass being made up into Balls as large as Eggs, put them into the Sieve, and with them a wooden Ball, so moved up and down about the Sieve that it may break the Balls of Powder: make all pass through the little Holes into Corns.

But in making of vast Quantities, to do it all by the Hand, would be a most tedious and slavish Work, and therefore Kings and the supreme Rulers of Countries have provided Mills for that Purpose, by Help of which they can do more in one Day than a Man can in an hundred.

You may make Powder of various Colours, if you so please, but then you must leave out the Charcoal, and put in as much for it of another Thing of the Colour you intend, which may be as apt to kindle or take Fire as Charcoal is; but for real Service, whether for War or Hunting, &c. the black Powder is much to be preferred; yet for Satisfaction Sake, we will give you the Directions for making *White Powder*.

White Powder. Take *Salt-petre*, 10lb. *Sulphur*, 1lbj. *Saw-dust of Elder, or the like Wood, dried and powdered fine*, 1lbj. *mix and make Powder by the former Directions.* Or thus: *R Nitre* 10lb. *Sulphurs* 1lbjss. *dried and finely powdered, Saw-dust* 1lbj. *mix and make Powder.* Or thus: *R Nitre* 10lb. *Sulphur*, 1lbj. *Rotten Wood dried and powdered* 1lbj. *Salt of Tartar*, ℥iiij. *mix and make Powder, to be kept close from the Air.*

This is also to be noted, that in making *Pistol Powder*, if you would have it stronger or more violent, you ought to stir it up several Times while it is in the Mortar, and moisten it with Water distilled from Orange or Lemon-peels in an Alembick, and then beat it for twenty-four Hours, as aforesaid.

Moreover, you ought to know, that Powder, when it is corned, is of much greater Force and Power than when in Dust or Meal; and from

hence it is concluded, that the larger Grains are stronger than the smaller, and for that Reason Cannon Powder is granulated larger than Musket, and Musket than Pistol; and therefore being put into Ordnance, Muskets, or Pistols, it ought not to be forced or beaten so home or hard into the Piece, as to bruise the Grains, lest it thereby lose much of its Strength.

To know the Goodness of Gun-powder. It is tried three Ways, by Sight, by Touch, and by Fire. *First by Sight*; If it be too black, it is too moist, or has too much Charcoal in it; so also if rubbed upon white Paper, it blacks it more than good Powder does. If it be of a kind of Azure Colour, or a little obscure, something bordering upon red, it is a Sign of good Powder.

Secondly by Touching; If in crushing of it with your Fingers Ends the Grains easily break and turn to Dust, without feeling hard, it has too much Coal in it. If in pressing under your Fingers upon a smooth hard Board, some Grains feel harder than the rest, or as it were dent your Finger's End, or very hardly yield to pressing, the Sulphur is not well mixed with the Nitre, and the Powder naught.

Thirdly by Burning; Lay little Heaps of Powder, three Inches or more asunder upon white Paper, and fire one of them; if it only fires and burns all away, and that suddenly, almost imperceptibly, without firing the others, and makes a small thundering Noise, and a white clear Smoak rising in the Air, almost like a Circle, the Powder is very good: But if it leaves black Marks behind it, it has too much Coal in it, or is not well burnt. If it leaves a Greasiness behind it, the Sulphur or Nitre are not well cleansed or ordered as they should be. And if two or three Corns of Powder be laid upon a Paper an Inch asunder one from another, and you put Fire to one of them, and they all fire at once, leaving no Sign behind but a white smoaky Colour in the Place, and the Paper not touched, the Powder is good; so also if fired in your Hand, and it burns it not; but if black Knots, which burn downwards in the Place where Proof was made, remain after firing, it is not strong enough, but wants Nitre.

BOOK V.

OF STONES.

P R E F A C E.

I mean by the Word Stone, a solid and hard Body that will not melt in the Fire, or be extended under the Hammer, formed in the Earth by Course of Time, being a kind of Mineral. I shall divide Stones, the Subject of this Book, into two Classes; to wit, into Precious and Common Stones. By precious Stones I understand those that are dear, either because they are scarce, or that they come from far distant Parts, and such as are very hard, small, and sparkling. And by the Common, I mean such as are of little Value: I shall begin with the Hyacinth, or Jacinth, as being the finest of all those we deal in, and of which we make the most Use. And by the way, the Reader may be pleased to take Notice, That I shall only speak of such as we deal in, not meddling with the fine Stones the Jewellers and Lapidaries trade in.

i. Of the Hyacinth, or Jacinth.

Pomet. **T**HE Hyacinth that is used in Medicine, is a Stone of which there are three Kinds, to wit, the *soft milky Hyacinth*, which is a little Stone of the Size and Figure of a moderate Grain of Salt, very tender, and of the Colour of Milk, from whence it derives its Name. The Second is a reddish Stone without and within, cut naturally like a Diamond Point, found very frequently in *Poland, Bohemia, Silesia, and Italy*: Some of this kind is often met with white mixed with yellow, red, or other Colours; but these different Sorts are not used by any, but such Apothecaries and Hucksters, as only consider the Cheapness, or do not know them from others; they ought to be entirely rejected, being nothing but a sort of Sand; as also another sort of false *Hyacinths*, that are little Stones about the Bigness of a Pin's Head, of a shining red, that are very common in several Parts of *France*, but chiefly in *Auvergne*, which are what we call *Jargons*, or false *Hyacinths*: Wherefore those that would have the *Jacynth* for the Confection that bears its Name, and is after described, must use no other than the *milky Hyacinth*, as being the true Oriental, and fit for medicinal Use: it requires no other Preparation than to be ground to an impalpable Powder.

Of the Confection of Hyacinth.

The Confection of *Hyacinth* is a liquid and cordial Electuary made of *Hyacinth*, red Coral, Bole from the *Levant*, sealed Earth, of each four Ounces and a half; Grains of *Kermes*, Dittany of *Crete*, *Tormentil* Root, Citron Seed, Saffron, Myrrh, Provins Roses, Sanders, the Bone of a Stag's Heart, Shavings of Harts-horn and Ivory, Sorrel, and Purslain Seed, of each ten Drachms and two Scruples; of Sapphire, Emerald, Topaz, fine Pearl, raw Silk, Gold and Silver Leaf, of each five Drachms and a Scruple; Musk and Ambergrise, of each two Scruples; powder all the Drugs, and grind the Stones on a Porphyry, then make them into an Electuary with Syrup of Lemons. Those who desire to know further of it, let them consult *Monsieurs Charas or Bauderon's Dispensatories*. The Confection of *Hyacinth* ought to be of a good Consistence, fresh and faithfully prepared, of a reddish Colour upon the Yellow: Those that prepare this Medicine ought not to put in Musk and Ambergrise, except by the Direction of the Physician; because the greatest Part is used by the Women, and those Perfumes are very improper for that Sex, especially in any hysterical Case. This Confection is much prescribed, because of its good Qualities in fortifying the Heart, resisting of Poison, &c. and it is of the same

same Nature with Confection of *Alkermes*, being much used in the *Lionnois*, *Provence*, and *Langue-doc*, where you meet with few People without a Pot of this Confection, or of *Alkermes*, or *Treacle*, about them, of which they take a small Quantity every Morning. The Dearness of this Medicine, and the Demand for it, is the Reason that you have a thousand Sophisticians of it, who do it so grossly and scandalously, that they afford you no better than Honey, Bole, Myrrh, and some Leaf Copper for this Confection, and sometimes a little Bastard Saffron; therefore the best Way is never to meddle with this except you have it from an honest and reputable Dealer.

Hyacinthus, sive Lapis Hyacinthinus, Lemery. the *Hyacinth*, is a precious Stone, of which there are a great many sorts that differ in Size and Colour; for some are as small as a Grain of Salt, of a white Colour, and this Kind is called the *soft milky Hyacinth*, which is the oriental; others are as big as Peas, very hard, of a red Colour, inclining to the yellow, bright, and resplendent. The Oriental are to be preferred to those of *Silesia* and *Bohemia*, they are known by their Bigness, their Beauty, and their Hardness; the Oriental exceed not the Size of a Pea, and are finer and more brilliant than the *European* kind. There are others much about the same Size, of a yellowish Colour, almost like Amber; some are white, partaking of red or yellow, and several other Colours; others are as small as Pins Heads, of a bright Red: This last kind is found in several Parts of *France*, and particularly in *Auvergne*; all the sorts are very cordial and restorative; Dose half a Scruple.

[The *Hyacinth*, or *Hyacinth Stone*, is the *Hyacinthus*, *Charlt. Foss. 38. Mont. Ex. 14. Worm. 104.* It is of various Colours; as red, yellow, and whitish; the yellow are the least esteemed of all.

Many superstitious Virtues have been ascribed to this Stone, but at present it is in no Esteem.

The *Hyacinth* of the Antients, according to *Pliny's* Account, was different from this of ours, as it was of a shining Violet Colour, and like the *Amethyst*: But all the Shades we have in the Colour of the modern *Hyacinths*, are between red, pale, yellow, and white, without the least Tinge of blue.]

Of the Topaz-stone.

Pomet. THE *Topazes* that are used in Physick are Stones of different Magnitude, very heavy and transparent, altogether resembling the *Muscovy Glass* found in the Plaister of *Mont Martre*: This Stone is found in the *East*

and *West-Indies*, *Bohemia*, and *Germany*. The *Topaz* needs no other Preparation for Medicine than to be ground with Rose-water on a Marble like *Hyacinth* and other precious Stones.

The true *Topaz* of the Antients, which was afterwards called a *Chrysolite*, is a transparent Gem, of a pale green Colour, that seems to have some Yellowness, or a Gold Colour in it, very glorious; some will not have this to be properly the *Topaz*, but rather the *Chrysolite*, or Mother of the *Emerald*: It is reported to be good against *Hæmorrhages*, and all manner of Fluxes of Blood; as likewise to stop Bleeding. This Gem is so hard that the File cannot touch it. It has been a Stone of great Esteem and Value, not only for its own Glory and Brightness, but for its sacred Use recorded in Scripture. It is sometimes counterfeited with double Crystals or diaphanous Stones, with a proper green Foil interposed, and being thus set in Inclosures, with a like Foil underneath, the Cheat will be hard to discover.

Topazius, Chrysolithus, Chrysopasius, Lemery. the *Topaz*, is a transparent precious Stone, of a greenish Cast, mixed with a little Yellow, shooting forth golden Rays. There are two sorts of it, the oriental and occidental: The first sort is harder, finer, and more valued. We have them brought from *Arabia*, *Æthiopia*, and about the *Red Sea*. It is said they grow among the *Alabaster*, and some pretend them to be the Mother of the *Emerald*, because these two Stones are something like one another in their Colour. The second sort are found in *Bohemia*, and are larger than the Eastern kind, but not so beautiful.

[There are two kinds of the *Topaz*, the *Topazius* and *Chrysolithos*, which are much confounded among Authors. But the true Account of them is, that the *Topazius* of the Antients is what we, at this Time, call the *Chrysolite*; and what they called *Chrysolite*, we now call the *Topaz*.

The first is the *Topazius veterum, quem recentiores perperam vocant Chrysolithon, De Laet. 46. Chrysolithos Modernorum, Worm. 106. Topazius veterum, Boet. 207.* This is what we now call the *Chrysolite*; and what the Antients called the *Topazius*, or *Chrysopasius*. It is a Gem of a green Colour, but fainter than that of the *Emerald*, and mixed with a Yellowness: The blended Rays of which two Colours in some Lights give the whole a reddish Colour.

The second is the *Topazius neotericorum veterum Chrysolithos, Worm. 106. Chrysolithos veterum, De Laet. 49. Mont. Exot. 14. Boet. 210.* This is what we now call the *Topaz*; but what the Antients called the *Chrysolite*: it is a pellucid Gem

of a shining yellow Colour, and is of two kinds, the oriental, which is of the Colour of the purest Gold, and very hard; and the *European*, which is soft like Crystal, and has often a greater or less Mixture of black in it.

Both these Gems have had great Virtues ascribed to them, but they are now never used.]

3. Of Emeralds.

Pomet. **T**HE *Emerald* is a greenish Stone that is found in different Parts of the World; as *Æthiopia*, *Egypt*, *Persia*, and both the *Indies*. The highest prized, or most valued *Emeralds*, are those called the *Prime Emeralds*, in that they are commonly pure and neat, that is to say, of a fine beautiful Green, inclining to the Blue. There is some Appearance that *Emeralds* are found in Iron Mines, because I have seen where the Iron has stuck to them. It is by some affirmed, that the *Emerald* takes its green Colour in the Mine, according to the Degree of its Perfections, as Fruits ripen upon the Trees; which I cannot confirm, having never seen the Truth of it. They are seldom found genuine with the Druggist, therefore should be bought of the Lapidaries.

Some Authors have made twelve Kinds of *Emeralds*, as the *Scythian*, the *Bactrian*, *Ægyptian*, *Cyprian*, *Attick*, *Æthiopick*, *Medick*, *Calcedonian*, *Samian*, *Sicilian*, *Laconic*, and *Cyprian*, or *Chalcosmaragdus*; to which of late has been added a thirteenth, called the *Smaragdites*, or *Bastard Emerald*. This Stone has been of great Esteem, not only for its Glory, but the Use it was applied to, being set in the Breast-plate of Judgment.

The *Smaragdo-Prasinus*, *Smaragdites*, or *Bastard Emerald*, is a transparent green Gem, of a mixed Beauty, between a *Prasinus* and an *Emerald*. Being compared with the *Prasinus*, it has the Greenness of Grass, without Yellowness; but being compared with the *Emerald*, it has a yellowish Greenness, which is not in the *Emerald*. It is seldom perfectly transparent, because of some Clouds in it, and is of two kinds; first, the *Bohemian*, which is almost transparent; and, secondly, the *American*, which is but half transparent. This Stone is said to be diuretick, expels Gravel, hinders the breeding of the Stone, and eases Pains of the Kidneys, and the Gout.

Smaragdus, *Prasinus*, or the *Emerald*, *Lemery.* is a fine, green, precious Stone that is diaphanous, shining, resplendent, but moderately hard. There are two kinds, one oriental, and the other occidental. The first sort is harder, finer, and more esteemed. It represents by its agreeable Colour and Pleasantness the Ver-

dure of the Field, and fills the Eye with a sudden glaring Light: It is brought from the *East-Indies*. The second sort may be distinguished into two kinds, *Peruvian* and *European*; the *Peruvian* shews a very fine, pleasant, green Colour, but does not shoot its Rays like the oriental, and is sometimes filled with little greenish Clouds. These are plentiful in *Peru*, and pretty large. The *European* sort is not so hard or resplendent, and the least valued of all. They are found in *Cyprus*, *Great Britain*, and several other Places. The Western are generally much larger than those of the East; for they are sometimes met with as big as the Palm of a Man's Hand. Both kinds are proper to stop the Flux of the Belly, and Hæmorrhages, to sweeten the too acrid Humours, being finely powdered, and taken inwardly; the Dose from six Grains to half a Drachm.

[The *Emerald* to be used in Medicine is the *Smaragdus*, *Kentm.* 47. *De Laet.* 33. *Charlt.* 38. It is of a glorious Green, but more brittle than any of the other Gems. If thrown upon a clear Fire, it emits a fine Flame, and totally loses its Colour; which is a Proof that its Colour depends on a Sulphur, which is separable from it without destroying its Substance; for the Stone still remains hard and transparent, though Colourless like Crystal.]

4. Of Saphirs.

WE sell two sorts of Fragments of *Pomet.* *Saphirs*, to wit, the red and the blackish. They are of the Size of a Pin's Head, extremely hard, and therefore difficult to bruise or pound. The red, which are usually of the Colour of Wine, ought to be employed for physical Uses; for as to the blackish Fragments of *Saphirs* they are rather like Rust of Iron than a precious Stone, and turn the Confection of Hyacinth black when put into it. Some substitute in the Room of the red Fragments of oriental *Saphirs*, those little Stones, very common in *Holland*, that we call *Vermeilles*, or small *Granats*, which beware of, though it is not difficult to distinguish them, because the true *Saphirs* Fragments are of a very fine, clear, transparent Red; which are contrary to the *Granats*, that are of a very deep Red.

Saphirus, vel *Sapphirus*, or the *Saphir*, is a fine, precious, brilliant, diaphanous, *Lemery.* resplendent Stone, of which there are two sorts, one called the Male, the other the Female. The Males are of a pale blue, or a Water of the Diamond Lustre. These last are called white, or Water *Saphirs*; they are less enquired after than the blue. The Female *Saphirs*

saphirs are of a deep blue; these are more valuable, and especially such as come from the *East-Indies*; as *Calecut*, *Pegu*, *Bisnagar*, and *Zeilan*. They are found likewise in several Parts of the Western World, as on the Borders of *Bohemia* and *Silesia*; but they are neither so perfect nor fine as the Oriental.

They use in Physick the Fragments or Pieces which the Lapidaries cut off from the *Saphirs*, which are much about the Size of large Pins Heads, reddish or blackish; but the red are preferred, because the black are full of Iron Stone; we may perceive they have some Analogy to the Load-stone, for they will be attracted like Iron. There are a great many Virtues attributed to the *Saphirs* which they have not; as the fortifying the Heart and other noble Parts, purifying the Blood, resisting of Poison. Their true Properties are to stop Fluxes, sweeten the Blood, and dry up Ulcers of the Eyes.

[The *Saphir* is the *Lapis Saphirus*, *Matth.* 1387. *Saphirus*, *Aldr. Mus. Met.* 971. *Kentm.* 48. *Charlt. Foss.* 38. It is a very hard Gem, of a beautiful Sky-blue, which, as it is deeper or paler, makes the Distinction of Male and Female *Saphirs*, as they are called. The *Saphir* comes nearest the Diamond in Splendor, Transparency, and Hardness; and there is a kind of it wholly pale, which is sometimes made to pass for a Diamond, but it is neither quite so hard nor so brilliant. The finest *Saphirs* are the Oriental, which are brought principally from the Island of *Ceylon*. The *European* are found in *Silesia* and *Bohemia*. The *Saphir* loses its Colour like the *Emerald* in the Fire, and then looks very like a Diamond.]

5. Of the Ruby.

Pomet. **T**HE *Rubies* are likewise little reddish Stones that are brought us from the *East-Indies*, and are of very little Use in Physick, for which Reason I shall say nothing of them, nor of a great many others which we sometimes sell, the Names of which are subjoined, referring the Reader to a Book, entitled, *The Perfect or Compleat Jeweller, or, The History of precious Stones*, composed by *Anselmus Boetius de Boot*, Physician to the Emperor *Rodolph* the Second; or to the *Indian Mercury*, made by *Rosnel*. The precious Stones we have, besides those mentioned before, are the *Diamonds*, the *Amethysts* of *Auvergne* and *Cartagena*, the *Agats*, the *Berils*, the *Sardius*, the *Granats*, the *Malaquits*, and several sorts of Marble, *Florence Stones*, &c. And as I have seen the vast Difference betwixt the Stones that we sell, and the fine Stones the Lapidaries use, I advise all those who would make the Confection of *Hya-*

cinth, to take rather the Chippings of the fine Stones, than fancy he can buy better at the Drug-gifts. I am, however, of the same Opinion with those who allow no other Virtue in all the precious Stones, than to absorb Acids.

Rubinus, *Carbunculus*, *Pyropus*, *Anthrax*, the *Ruby*, or *Carbuncle*, is a fine, *Lemery.* diaphanous, precious Stone that is very hard, and resists the File. It is resplendent, and of a Colour as red as Blood, mixed with a little Tincture of blue. There are several kinds of it; but the finest, hardest, and most valuable, is that from *Zeilan* in the *Indies*. There are some likewise in *Gambaya* and *Bisnaga*; but these are not so fine.

There is assigned to the *Ruby* the Virtue of resisting Poison, strengthening the Vitals, driving away Melancholy, restoring of lost Strength; but we know by Experience it has no other Quality than that of an Alkali Powder, that sweetens the Sharpness of the Humours, and breaks their Points, and consequently stops the Flux of the Belly; Dose from half a Scruple to two Scruples. It is called *Rubinus* from its red Colour, and *Carbunculus* from its Reflection, looking like a red-hot Coal of Fire.

[The *Ruby* is the *Carbunculus*, *five Rubinus*, *Aldr. Mus. Met.* 957. *Rubinus verus*, *Boet.* 144. *Carbunculus*, *Kentm.* 50. It is a pellucid Red Gem, extremely hard, found in greatest Perfection in the Island of *Ceylon*. It is divided, on Account of its Degrees of Splendor, into four kinds, the *Pyropus*, *Balafius*, *Rubicellus*, and *Spinalcus*. But as those Distinctions are of no Use in a Work of this kind, I shall not enlarge on them.

This, like the rest of the Gems, has had many great Virtues ascribed to it; but the present Opinion is, that they have no other than those of all alkaline Absorbents: however perhaps, it is too rash a Censure, and our Stomach may act upon them, as Fire does, separating their Sulphurs, in which their Colour consists; and those Sulphurs may, for ought we know, be able, notwithstanding their small Quantity, to do great Things, as indeed it is a very idle Thing to judge of the Force of a Medicine by its Quantity, the most powerful of all generally acting in the smallest.]

6. Of Lapis Lazuli, or the Azure Stone.

Pomet. **T**HE *Azure Stone*, which is commonly called *Lapis Lazuli*, and by some *Lapis Cyaneus*, and *Lapis Stellatus*, is a heavy Stone of a Sky-blue, sometimes full of Rock Stone, and frequently streaked with Veins of Copper, which the Antients, and some Moderns, have thought

thought to be Gold. The greatest Part of this Stone that we have, comes from *Persia* and the *East-Indies*; some affirm that it is usually found in Gold Mines, and that it is a *Marcasite* of that Metal: However it is certain that this Stone is got out of Quarries, as other Stones are here, which is the Reason we have it of all Sizes; the *Lapis Lazuli*, to be perfect and fit for making the *Ultra-marine*, which is the chief Use it is put to, except the fine Works made of it, ought to be heavy, of a deep Blue, like fine Indigo, with as few Copper or sulphureous Veins as possible, and take Care it be not rubbed with Oil Olive, in order to make it appear of a deeper Blue; but the Cheat is not hard to discover, because it ought to be of as fine a Blue within as without; likewise refuse such as is full of Stones, and the pretended Veins of Gold; for that, when it is burnt to make *Ultra-marine*, will stink extremely, having a sulphureous Smell, which shews that its Veins proceed not from Gold.

There is an Error some People are guilty of, in believing, as some have pretended, that this Stone, when fine, will encrease its Weight in the Fire: This is certain, that the finer this Stone is, it will lose the less in the Fire; and that there is some of it that loses so little that it is not worth speaking of; but let it be never so good, it will always lose something; so far is it from being encreased in Weight: You ought to put the Stone into the Fire to see if it be good, for if so, it will not change its Colour for being heated hot. The Choice of this Stone is quite other than has been described by others, who say, that that which is full of yellowish or golden Veins ought to be most valued; which I maintain to be false, since the more it is so, the less it is esteemed, especially by those who use it to make *Ultra-marine*. You must beware that it be not a greenish Stone, very common in *France*, which is found about *Toulon*; or that it be not a counterfeit Stone, made up of Tin and *Zaffre*, as has been observed in the Chapter of *Enamels*. This Stone is of some Use in Medicine, because it is put into several Galenical Compositions, as Confection of *Alkermes*, &c. There are Authors who attribute great Virtues to this Stone, and amongst others Monsieur *Demeuve*, to whom the Reader may have recourse; and there are several others who say that *Lapis Lazuli*, and the *Armenian Stone*, are almost alike, which will be found to be false, as you will see in the next Chapter.

Of Ultra-marine.

Pomet. *Ultra-marine* is, properly speaking, a Precipitate made from *Lapis Lazuli*;

some say it took its Name of *Ultra-marine*, from being made beyond the Seas; the first of the kind coming from *Cyprus*; but others will have it that the Name was given it because this Blue is much more beautiful than that of the Sea. A Friend of mine assured me that the first *Ultra-marine* was made in *England* by one of the *East-India Company* there. You ought to chuse that which is of the highest Colour, well ground, which is known by chewing of it betwixt the Teeth; if it is gritty, it is a Sign that it is not well ground: And to discover if it is genuine and not sophisticated, heat a little of it red-hot in a Crucible; if its Colour is not changed, it is the true; for if it is adulterated there will be black Spots in it: Its Use is for Painting in Oil and Miniature. The manner of preparing *Ultra-marine* is described in so many Books, I thought it needless to repeat it here; I shall only say, that those who prepare it make it into four sorts, which proceeds from nothing else but the different Washings of the Powder, whereof the first is abundantly more beautiful than the others.

Lapis Lazuli, *Lapis Cyaneus*, *Lapis Cæruleus*, or the *Azure Stone*, is of different Sizes and Figures, being opaque, heavy, and of a blue Colour, intermixed with Streaks of Gold and Copper: It is found in Quarries in the *East-Indies*, and in *Persia*, and some say in the Gold Mines; its Use is chiefly to make *Ultra-marine* of, for which Purpose chuse the cleanest, weightiest, of the highest Colour, and best Blue; it contains a great deal of Sulphur and Salt. To make *Ultra-marine*, they calcine this Stone, and grind it fine on a Porphyry, and mix it up in a Paste made of fat Pitch, Wax, and Oil; then they wash this Paste well to separate the blue Part, which precipitates to the bottom in a very beautiful Powder; they pour off the Water leisurely, and dry this Powder, which is for the Painters Use. *Lapis Lazuli* prepared purges melancholy Humours, fortifies the Heart, and is used in the Confection of *Alkermes*; the Dose from half a Scruple to a Drachm. There is found near *Toulon* in *France*, in *Germany*, and several other Parts of *Europe*, a false or Bastard *Lapis Lazuli*, that is greenish and thicker, which is employed for common Uses.

[The *Azure Stone* is the *Lapis Lazuli*, *Worm.* 65. *Charlt. Foss.* 27. *Cæruleus Lapis*, *Matth.* 1354. *Lapis Cyaneus*, sive *Lazuli*, *Ald. Mus. Met.* 870. *Cæruleum Nativum*, *Wood. Att. T.* ii. P. 1. p. 42. It is an opaque hard Stone, of the Colour of the *Saphir*, with gold-coloured Specks and Veins, and is harder than the *Armenian Stone*. It is found in Gold and Copper Mines, and is of two kinds, the Oriental, which is brought chiefly from *Asia* and

and *Africa*, and stands the Fire without losing its Colour. Of this the *Ultra-marine* is made; and the Occidental, found in *Germany* and *Italy*, which loses its Colour by Fire, or by Age, or many other Accidents, and in time turns green. The blue Colour of this Stone is owing to some Particles of Copper it contains; and in Medicine it is accordingly emetick and purgative. The Antients also acknowledged a styptick Virtue in it; for which Reason they gave it a Place in the Confection of *Alkermes*, &c. And certain it is, that no ill Effect ever appeared from the taking that Medicine, while it was a constant Ingredient in it. However, as it cannot well be supposed to add any thing to the Virtues of it, it is at present left out of it in the College Dispensatory.]

7. Of the Armenian Stone.

Pomet. THIS is a little Stone usually of the Size of a Bullet, of a greenish Blue without and within, adorned with small white glistering Sparks rising beyond its Surface, like Spar, or small Diamond Sparks. They attribute great Virtues to this Stone, as that it is good to cure the *Falling-Sickness*, *Melancholy*, and the like. This Stone is ground and washed to free it from the Spar and little Sparkles, which look like Gold, though they are only Sand; and afterwards dried and brought to us by the Name of *Powder Green*, or *Verditer*; which is used by the Painters, but more especially by those, who, to encrease their *Mountain Green*, mix equal Parts of both together to make it come cheaper, that so they may get more Money by it; for which Reason never buy any *Mountain Green* but of Persons you can trust, and such as has the Marks I gave, when treating of it; and when put upon Paper, stains it not, but is like Sand, which is a Sign it is not mixed with *Verditer*. We sell several sorts of *Verditer*s, which have no other Difference but according to the Preparation given them; the finest sort ought to be very dry, fine, and of a high Colour.

Armenus Lapis, seu Lapis Armenis, Lemery. *seu Melochites*, the *Armenian Stone*, is of different Shapes and Sizes, but most commonly round, uneven, rough, as big as a Nut, of a Mixture of Colours, blue, green, white, &c. It is brought from *Armenia*, whence it derives its Name; but at present it is also found in *Germany*, as in the County of *Tyrol*; it differs from *Lapis Lazuli*, in that it is not so blue, but fuller of a drossy Stone and other Impurities; and that this is taken from the Silver Mines, whereas the other is found in the Gold Mines. Chuse that which is of the deepest Colour. They grind this Stone and

wash it, to separate the finer Parts, or the Sand which shines like Spangles of Gold; and when dried, they sell it by the Name of *Verditer*, for the Painters Use. This *Armenian Stone*, prepared, is deterfive and desiccative, or drying, being outwardly applied; and inwardly purges melancholy Humours; it is good for the Epilepsy, &c. the Dose from a Scruple to a Drachm.

[The *Armenian Stone* is the *Lapis Armenus*, *Worm.* 66. *Charlt. Foss.* 27. *Armenium*, *Aldr. Mus. Met.* 351. Copper Ore of a Sky or pale blue Colour, *Woodward*. This is principally found in Silver Mines. It is an opake soft Substance of the *Lapis Lazuli* kind, with gold-coloured Specks and Spots of green, bluish, and black: It is of the same Virtues with the *Lapis Lazuli*, as containing the same Principles, but is more strongly purgative. The Painters make of it a very fine Blue, with a greenish Cast.]

8. Of Smalt, or Powder Blue.

SMALT is either a Composition, or a *Pomet.* Stone pulverized, which we have from *England* and *Rouen*, whither it is brought by the *Swedes*, *Hamburgers*, and *Danes*: The greatest Part of this *Smalt* comes from *Dantzick* in *Poland*, as well as several other Colours, with Zink and Tin-glass; but this being a Trade known but to few People, those who deal in these Commodities directly from *Dantzick*, are able to sell cheaper than those who trade from *Holland*, *England*, or *Rouen*. After all the diligent Enquiries I could make, I have found it impossible to find out what this *Smalt* is, some assuring me that it was a Composition made at *Rouen*; but as those who made it kept it as a Secret, I never could discover of what it was. It ought to be very fine, of a deep Colour, and as dry and like to *Ultra-marine* as possible; its Use is for the Painters.

Smalt, or Cinis Ceruleus, is either a powdered Stone, or else a Composition. *Lemery.* of a blue Colour; which is brought from *Poland*, and is used by Painters.

[*Smalt* is the *Encaustum Ceruleum*, used by the Painters, &c. It is made of *Cobalt*, Pot-ashes, and Flint-stones, or Sand, melted together into a vitreous, opake, bluish Mass, and afterwards ground to Powder in Mills. The greatest Quantity is made in *Saxony* and *Germany*: It is never used in Physick.]

9. Of the Jasper.

THERE being various sorts of *Jaspers*, *Pomet.* such as the Green, the Purple, *Cerulean*, *Aurora*, or Crystal-like, I shall speak only of that.

that which is sold in the Shops, which is the *green Jasper*; and if it had not been of some small Use in Medicine, I should not have spoken of it. Being a very precious Commodity, it is very liable to be counterfeited in Glass. Chuse such Pieces as are of a fine deep Green, smooth, and shining, full of red Spots, as if they were little Drops of Blood, and which can take no Impression from the Point of a Needle drawn upon them; which is a Sign that they are truly Oriental. Some People affirm, that the green Jasper is very proper to cure the Epilepsy, and that it is a good Cordial. It is prepared as the *Hyacinth* and other precious Stones.

Jaspis, the *Jasper*, is a fine, hard, *Lemery*. smooth, resplendent, precious Stone, which differs little from the *Agate*, only that it is not so hard and pure: There are a great many kinds of it, but the Oriental is the best. It ought to be very hard, of a deep Green spotted with red; and it is of some Use in Physick, ground fine upon a Porphyry. The prepared Powder is astringent, proper to stop Blood and the Scour of the Guts. Great Virtues are assigned it in the Epilepsy, also to strengthen the Stomach, and bring away the Stone in the Kidneys, &c.

[The *Jasper* used in Medicine is the *Jaspis*, *Boet.* 250. *De Laet.* 79. *Charlt. Foss.* 32. It is an opake Stone, of a mixed Green, with Spots of Red like Blood: It is found in the *East-Indies*, and is supposed to have the same Virtues with the *Corne-lian*, which are, the stopping Hæmorrhages, and remedying the Effects of Poisons; but these are both supposed imaginary, and neither of the Stones ever now used in Medicine.]

10. Of the Jade Stone.

Pomet. THE *Jade* is a greenish Stone, inclinable to Grey, extremely hard, and very rare. This Stone is little used in Physick, but pretty much in several sorts of Works that are very valuable, it being very difficult to cut. The *Turks* and *Poles* use a great deal of *Jade* to make Handles for their Knives, Sabres, Swords, and other Things, which they adorn with Gold. The Oriental is the finest *Jade*.

Jade is a very hard Stone, of a greenish grey Colour. The finest comes from the *East-Indies*. The *Turks* and *Poles* make several Uses of them, and it is difficult to work because of its excessive Hardness. Some pretend, that applied to the Region of the Kidneys, they are proper to bring away Stone and Gravel; but I can give no Credit to such Remedies.

[The *Jade* is the *Lapis divinus*, *Boet.* It is a Stone very like the *Lapis Nephriticus*, but extremely hard; it is much used in some Parts of the World for Toys, but has never, I believe, been given inwardly, though in common Use among the savage *Indians* as an Amulet.]

11. Of the Nephritick Stone.

THE *Nephritick Stone* is a greyish *Pomet.* Stone, with a little mixture of Blue in it, so that it is usually of a bluish grey Colour, being fat and oily like *Venetian Talck*. This Stone is much valued by certain Persons for the Cure of the Gravel, which makes it so scarce, and so much enquired after. It performs its Business by hanging about the Thigh of those who are troubled with the Stone or Gravel in the Kidneys, from whence it is called the *Nephritick Stone*. The Dearth and Rarity of this Stone is the Reason why some substitute in its stead a kind of green Marble of *Italy*, called *Malaquitte*, and cut and carve it like a Bird's Head, because the Antients believed that the true *Nephritick Stone* resembled a Bird's Head, or the Beak of a *Perroquet*. The true *Nephritick Stone* comes from *New Spain*, and whoever would know further of it may read Mr. *Worms*, who has writ a large Description of it, too long to be inserted here.

Lapis Nephriticus, or the *Nephritick Stone*, is of different Sizes, pretty hard, *Lemery.* opake, of a bluish Grey or Ash-colour, but sometimes mixed with White, Yellow, or Black, and is not perfectly smooth, because it is unctuous like *Talck*. It is found in *New Spain*, sometimes with the *Jasper*, and sometimes alone. Some reckon it among the kinds of *Jaspers*, making no great Difference, but only that this is the harder: For the most part they are found like Whet-stones, in the Fields in great Lumps, so big, that a Cup may be made of them. *Carolina* affords pretty large ones, about eight Inches long, three broad, and two thick; and of an ash-coloured Green: They are likewise gathered in *Bohemia*, and several Parts of *Spain*; but these are not so much esteemed as what come from *America*.

This Stone has the Property to ease the Stone Cholick, to break the Stone in the Reins, and expel Gravel by Urine, being hung about the Neck, Thigh, or Arm: Some prescribe it to be taken inwardly, from four to fifteen Grains. Of latter Years there is brought into Use for the same Diseases, a brown, smooth, shining Stone, which they call, from its great Virtues, the *Divine Stone*; this breaks the Stone in the Kidneys, and forces it away by Urine; they tie it in their Clothes about the Back.

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[The *Nephritick Stone* is the *Lapis Indicus Nephriticus*, Aldr. Mus. Met. 706. *Lapis Nephriticus*, Mont. Ex. 14. Charlt. Foss. 33. Worm. 95. It is a Stone of many Colours, as, green, blue, yellowish, whitish, and dusky brown, but always having more of the green than of any other Colour. It is found in *America* and some Parts of *Europe*, and is supposed to have great Virtues, but is scarce ever used at present.

The *Divine Stone*, mentioned here by *Lemery*, is the *Jade* mentioned in the last Chapter; and the *Malaquite*, often substituted for it, is the *Mala-chites vel Molochites*, Worm. 263. De Laet. 87. *Malachites*, Aldr. Mus. Met. 900. It is of the *Jasper* kind, and is found in *Cyprus*, *Misnia*, and *Tirol*, but is never used in Medicine.]

12. Of Venetian Talck.

Pomēt. THE *Venetian Talck* is a kind of greenish Stone, in Scales or Flakes, which though it seem fatty in the handling, is nevertheless very dry and heavy; the finest is that which is found in the Quarries situated near *Venice*, from whence it is called *Venetian Talck*; it is found also plentifully in *Germany*, and about the *Alps*. The best *Talck* is that which is in large, white, greenish, shining Stones, that, being broken, sparkle like Silver Spangles, and which, being separated into small Leaves, is white, clear, and transparent; but take care that it be equally fine throughout; for that which is in great Stones is very subject to be bad, by reason of a great many yellow or reddish Veins that are found within, accompanied with a kind of Earth that spoils the Sale of it. There is some also which, instead of being of a greenish White, is of a reddish Yellow; so that we had better take that which is in moderate Pieces, which we may know at sight.

Talck is much in regard with the Ladies of Quality, who use it for a Cosmetick; and as it is exceeding difficult to reduce it into Powder, or even to calcine it, the way is now to grate it with a Fish-skin, and then to searce it; so using it as Occasion shall require. Hence it is, that almost none but such *Talck* as is in moderate Pieces, of a Size fit to be held in the Hand, is now called for.

Venetian Talck, while it is whole, is of a greenish Colour; but being broken, or divided into thin Scales, is white; it is known from *English Talck* by its Friability, its green Colour, and Fixedness in the Fire: For some who have kept it forty or fifty Days in a Glass-house Fire, have taken it out at the end of the Time, and found no Alteration in it, neither in respect of Resolution, Colour, or Weight, but it has come out absolutely the same thing as it went in. This *Talck* therefore

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being of so fixed a Nature, our Labour now must be to shew how to open its Body, in order to make those Preparations of it which we desire, at least the noble White, which Ladies, with so much Curiosity and Charges, seek after and pursue. If it true, there are a great many Men that boast what Preparations and Secrets they have of *Talck*; but this we certainly know, that there is no liquid Substance of it yet invented or known, made out of the simple thing itself; but such as is compounded by the mixture of such Salts as are able to penetrate the Stone; so invincible is the Fixedness of the true *Venetian Talck*: Therefore to attempt to calcine it, without the Addition of some piercing Salt, is Vanity; but by the help of some Salts, and acrid Spirits, a good Cosmetick may be made of it, to change and whiten the Skin.

The Antients, and especially the *Arabians*, were sometime of opinion, that from *Talck* might be drawn a Remedy of such Efficacy, as ever to preserve the Body in good Case; for which Reason they gave it the Name of *Talck*, as much as to say, an equal Disposition of Body, according to which it is in perfect Health: And from hence, undoubtedly, hath proceeded the vulgar Error concerning an Oil of *Talck*, which is so much commended, and to which such extraordinary Virtues are attributed; and so prevalent hath this Error been, and still is at this Day, that whoever could find the Secret of getting an Oil from *Talck*, without the Addition of Salts or Acids, might be sure to sell it for its weight in Gold; yea, I may venture to say, twenty times more. But since, as I believe, the high Commendations and wonderful Virtues usually ascribed to it, proceed only from a Supposition that it can never be had, I shall say no more of it, but that some Persons, who flatter themselves with a Belief that they have the Secret of making it, affirm that it is incomparably good for whitening the Skin, smoothing the Face, and, in a word, to make old People renew their Youth.

Some say, if *Venice Talck* be heated red-hot, and put into an Iron Mortar almost as hot, it may be beaten in a small time to a most fine impalpable Powder, which being searced, may be mixed with *Unguent*s and *Pomatum*, and used as other Cosmeticks of the like kind. This *Talck*, thus pulverized, may be strewed among Snail Shells, and left in a glazed Pipkin till they have sucked it all up; then having bruised all together, put the Mixture into a Glass Cucurbit, covered with its Head, and distil the whole Mass, and you will have a Cosmetick Water, good to cleanse and beautify the Skin with.

We have another sort of *Talck*, brought us from *Muscovy* and *Persia*, which they call Red or Leaf *Talck*,

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Talck, because it is of a reddish Colour, and easy to be divided into Leaves as thin as you please. This Red or Leaf *Talck* is only used, so far as I know, by the Monks and Nuns, who put it, instead of Glass, before their Pictures and *Agnus's*; but they do not, as some Authors affirm, employ to this Purpose the *Venetian Talck*. This then, as I have said, being the only Use of the Leaf *Talck*, we ought not to meddle with any but what is in large Leaves, and when split, or divided into very thin Pieces, is of a crystalline Clearness and Transparency. There is not almost a more curious Commodity in the World than Leaf *Talck* with the required Qualifications, forasmuch as it is very rare to be found: It is a thing so very hard to understand, that I would not advise any one to buy any but what is approved by those who work in it; that which, being thick, is blackish, and may be divided into Leaves extremely thin and transparent, is judged to be the best.

Talcum, or *Talck*, is a kind of Stone, *Lemery*. or a mineral Matter, that is fine, white, smooth, soft to the Touch, shining, and transparent, dividing into Leaves or Scales that will not burn: Some call it *Stella Terræ*, because it shines like a Star: There are two kinds of it, one called *Venetian Talck*, and the other *Muscovy Talck*; the *Venetian* sort is soft, scaly, heavy, and appears greasy to the touch, though it is dry, of a Silver Colour, tending to green, something transparent: Chuse the finest white shining Pieces, upon the green Cast, that separate into little nice clear Leaves, or Flakes, that shine like Pieces of Silver. When you would reduce this into Powder, rasp it with a Sea Dog's Skin, or rather calcine it in a Crucible about a Quarter of an Hour; then beat it in an Iron Mortar almost red-hot, and sift it through a Sieve. It is used in Cosmetick Pomatums by the Ladies.

The *Muscovy Talck* is hard, smooth, shining, and soft to the Touch, dividing or breaking into thin Leaves, that are almost as transparent as Glass, and sometimes it is reddish: This comes from the Quarries in *Muscovy* and *Persia*. Chuse the finest and clearest. It serves them for Lanthorns, as we use Horn; but the *Talck* is more commodious, for it is more transparent, and not so subject to burn. *Talck* is difficult to reduce to Ashes by the Fire, because the Pores of it being small, the Parts of Fire slide through without making any Impression. I attempted to calcine both sorts by a Burning-glass: That of *Venice* was changed by the solar Fire into a grosser, yellowish, opaque Matter; and that of *Muscovy* into a light farine, being very fine white Powder.

[*Talck* is the *Talcum*, *Aldr. Mus. Met.* 685.

Talcus fossilis, *Calc. Mus.* 458. *Talcum alias Stella terræ*, *Charlt. Foss.* 24. It is a shining fissile Stone, easily divided into thin Laminæ looking like Silver Spangles: There are many Kinds of it, but the Greenish or *Venetian*, the *Talcum Viride*, *Mont. Ex.* 14. is most esteemed as a Cosmetick, which is the principal Use it stands commended for. There is a more silvery kind, much esteemed by the Chymists, and called *Argyrolithos*; and a yellowish, which they call the Solar *Talck*. They think by an Oil of these *Talcks* to turn Quicksilver into Silver; but they do not consider that what they call Oil of *Talck* is entirely the Product of other Substances mixed with it.

The best way to powder the *Venetian Talck* is, to heat it several times over in the Fire, and quench it in cold Water, then levigating it on a Porphyry, it becomes a fine shining white Powder, very smooth to the Touch, and fit to mix in Pomatums.

What our Authors call Leaf *Talck* is the *Lapis Specularis*, *Kentm.* 26. *Worm.* 56. *Mont. Ex.* 14. *Glacies Mariæ seu Lapis Specularis*, *Koning. Lapis Mariæ Neoterici*, *Charlt. Foss.* 23. It is brought from *Spain*, *Muscovy*, &c. It is said to be a good Medicine in Epilepsies, but its principal Use is in small Works, instead of Glass or Horn, for the preserving Microscope Objects, &c.]

43. Of Briançon Chalk.

THE *Briançon Chalk* is a kind of Stone, or a mineral Substance, almost like *Venetian Talck*, but harder, and that does not so readily split or separate into Scales: There are two kinds of it, one white, and the other green; they are found in the Quarries or Pits near *Briançon*: They serve to take Grease Spots out of Clothes, and for Taylors to mark or score with. Chuse the neatest, smoothest, green, and soft.

[*French Chalk* is the *Morœthus Dioscoridis*, *Morœtes Plinii*. It is an Astringent, is good in Hæmorrhages, and is used with Success in Collyriums for Ulcers of the Eyes.]

15. Of Spalt or Spaad.

SPALT or *Spaad* is a scaly bright Stone, *Pomct.* very like Parget Stone, except that this is whiter. They find abundance of these Stones in *Germany*, especially about *Augsburg*; there are some likewise in *England*, but not so good. We sometimes see Fragments of this Stone adhering to and mixing with Frankincense, a Sign that it is found in the Places whence it comes. It should be in long brittle Scales, that may be easily crumbled to Powder

Powder with the Nail of one's Thumb, which cannot be done by that of *England*, being more hard. *Spalt* is used by several sorts of Workmen, being said to be good to assist the Founders in melting of their Metals; which I cannot affirm to be Fact, having never seen it tried.

Spalt is a scaly Stone that is bright, *Lemery.* and looks like Plaister-stone, or Crystal of *Montmartre*, but it is much whiter. It is met with in *England* and *Germany*. The Founders use it to flux their Metals with. It is deterfivè and drying, outwardly applied.

13. Of the Lapis Judaicus, or Jews Stone.

Pomet. THE *Jews Stone* is of different Sizes and Figures; but the most common Size is that of an Olive, adorned with little Streaks or hollow Lines, running from one End to the other, and sometimes it is altogether smooth. This Stone is usually grey, and sometimes of a reddish grey, and shines like our little Flints, of which I believe it to be a Species. These Stones are brought us from different Parts of *Judæa*, from whence they take their Name; they are likewise called *Syrian* and *Phœnician* Stones. This Stone, though it be like a Flint, it is not so hard, yet not so easy to break as some Authors have asserted; but being broken, it is of a whitish Grey, and shining. Mr. *Charas*, in his Book of Chymistry, at the 821st Page, says, that this Stone, being calcined with Sulphur, distilled Vinegar, Spirit of Salt, and Spirit of Honey, there may be drawn from it a Salt that is admirable for breaking the Stone; where those who are desirous to prepare it, may be instructed therein.

Lapis Judaicus, Lapis Syriacus, Lemery. Phœnicites, Tecolithus, or the *Jews Stone*, is of various Forms and Bigness, but most usually is shaped like a small Olive, streaked all over with Lines that run through the length of it, and are equally distant one from another: Some are found smooth without any, and some in a cylindrical Form. The Colour is grey, and sometimes reddish without, and whitish within. It appears to be hard like a Flint, but is soft, and may be easily beat to Powder: They are distinguished into Male and Female; the Male is that which is large, long, and of a cylindrical Figure; the Female is that which is of the Shape and Size of a small Olive. They are both indifferently used in Physick, being first ground to a fine Powder on a Marble: This Powder is given to stop Fluxes of the Belly, to provoke Urine, and to break the Stone in the Kidneys and Bladder.

[This is the *Lapis Judaicus*, *Kentm.* 28. *Boet.*

408. *Charlt. Foss.* 29. *Radiolus Glandularius subcinereus major partim striatus, partim tenuissime punctulatus. Lang de Lap.* 127. *Radiolus Glandularius seu Lapis Judaicus, Boetii Lhuyd. Lith. Brit.* 49. They are found of various Lengths, Colours, and Thicknesses, and are the petrified Spines of a large Species of the *Echinus Ovarius*, or *Sea Urchin*.

They are said to be diuretick and lithontriptick, but are little used at present.]

16. Of the Lapis Lyncis, or Thunder Stone.

THE *Belemnites*, called also the *Lynx Pomet.* Stone, is a kind of Stone made in a pyramidal Form, to which the Antients gave the Name of *Belemnites*, from its resemblance to a Dart or Arrow; and others, of *Dactylus Ideus*, from its likeness to a Finger, and because it is found on Mount *Ida*; others say it was called *Lapis Lyncis*, because it was believed that it was formed from the Urine of the *Lynx*. This Stone is harder than the *Jews Stone*: They attribute the same Virtues to it: Mr. *Charas* has told me it might be prepared after the same Manner, and used for the same Purposes. This Stone being broken, is of the Colour of Horn in the Cavity, in which is found a sort of grey dry Earth, of an insipid Taste, and like to be good for nothing. At the End of the Stone there also appears, as it were, the resemblance of a Sun. Plenty of these Stones are found about *Paris*, in digging and labouring the Ground, especially in sandy and gravelly Soils.

Belemnites, sive Lapis Lyncis, sive Dactylus Idæus, the *Thunder Stone*, or *Lemery. Thunder-bolt*, is about the Length and Thickness of a Man's Finger, sometimes more, and sometimes less, round-pointed, or in a pyramidal Form, like an Arrow. They are found of different Colours, sometimes white, sometimes grey, and sometimes brown; brought usually from *Candia*; but they come likewise from *Germany*. They find the same about *Paris*, in the sandy Grounds; and there are two sorts of them, one, that being put upon the Fire will yield a bituminous Smell, and the other none at all: The first is plainly that which the Antients called *Lyncurium*, and believed falsely to be a kind of *Succinum*, or Amber, that was made from the Urine of the *Lynx* coagulated. The Stone being broken, they find in its Concavity, that looks of a Horn-colour, a little dry grey Earth, without Smell or Taste. This Stone is used to break the Stone in the Kidney, and to expel it by Urine, being taken inwardly. It is also used externally to cleanse and dry Wounds. It is ground on a Marble to reduce it to Powder.

[The *Thunder Stone* is the *Lapis Lyncis*, *Schrod.* 353. *Belemnites Lapis, seu Dactylus Idæus*, *Boet.* 476. *De Laet.* 150. It is a rounded oblong Stone, ending in an obtuse Point, of different Colours, sometimes solid, and sometimes hollow, and distinguished by Lines drawn from the Axis to the Circumference, and with a Fissure or Slit running the whole Length: They are commonly about two Inches long.

It is an Error to think this the *Lapis Lynceus* of the Antients; for it is evident, that *Dioscorides*, by that Word, understood another Stone, which some at that Time thought the indurated Urine of of the Lynx.

It is said to be a powerful Lithontriptick, but is never used at present.]

17. Of the Bolognian-stone.

Pomet. THIS is a heavy Stone of a shining Silver grey, very like in Figure to the *Nephritick-stone*, which is found very commonly about *Bologna* in *Italy*; whence it takes its Name. This Stone is of no other Use, than, after Calcination, to make a kind of *Phosphorus*, of which Mr. *Lemery* treats largely, and better than any who have gone before him, at the End of his Book of *Chymistry*; and likewise Mr. *Worms*, he having writ a long Discourse of it, whither those who desire to make it, may have recourse. The *Bolognian-stone* is not yet well known amongst us, which is the Cause we sell so little of it. Some call this Stone calcined, the *Sun* or *Moon Sponge*, the illuminated Stone, *Lucifer*, *Cassolanus* his Stone, or *Kercher's Phosphorus*.

Lapis Boloniensis, Chrysolapis, or the *Lemery. Bolognian-stone*, is a Stone whereof a *Phosphorus* is made. It is ordinarily of the Bigness of a Walnut, bunched, uneven, flat-ish, and disposed in such a Manner, that the Side opposite to the Bunch or Knot, made a kind of Cavity. It is heavy, grey, soft, shining in several Parts, crystalline within, almost like *Talc* of *Montmartre*. It is found in several Parts of *Italy*, but chiefly at the bottom of Mount *Paterno*, which is a Part of the *Alps*, and distant from the City of *Bologna* about a League. They are easily discovered after the Floods of Waters that happen from the great Rains; for then the Earth is washed and cleaned that surrounded them, and hindered them from being seen. They are distinguished from other Stones of the Mountain by little Sparks that appear on their Surface; and we may see, in the Cabinets of the Curious, some of those that weigh to five Pounds. These large Stones are no

otherwise valuable than for their Scarceness, they being more earthy than the small ones, and not so good to make the *Phosphorus* of.

The best *Bolognian-stones* are those which are found covered on the Outside with a thin, white, and opake Crust; but these are very rare. And since we cannot often come at them, we use the common sort, which should be chosen with the fewest Spots, and bright. The worst are those where there appear Veins of Vitriol or Iron: These contain in them much more of Sulphur and Salt.

The *Bolognian-stone* is prepared and reduced into a *Phosphorus*, by a moderate Calcination, that purifies and exalts the Sulphur more than it was. This Calcination is made in the following Manner: Take seven or eight of these Stones cleansed on the Outside with a Rasp, or Knife, and powdering very finely one or two of the most shining of them in a Brass Mortar, throw the others whole, one after another, into clear Water; and having taken them out, cover them entirely over with the Powder, by rolling them in it, that they may lick up as much as they can; then put them into a little Furnace or Stove, with a Brass Grate, upon which you must lay them in Order, with a Fire under them to calcine; which when done, let the Fire go out of itself; and when all is cold, take off your calcined Stones gently from the Grate; separate the Crust, which comes from the Powder in which you have rolled them, and keep the Stones in a Box with Cotton; preserve likewise the Crust, which is to be reduced into an impalpable Powder.

These calcined Stones are the *Phosphorus*, which being exposed to the Day in an open Field or Street, are lighted as it were in an Instant; after which, if they are carried into a dark Place, they will appear like lighted Coals, without any sensible Heat, and you may extinguish them by little and little; but if you let in the Light, they will burn again: And thus they will last for two or three Years together, according as they are more or less frequently exposed to the Light. And when these Stones have lost their Virtue, they may be restored again, by observing the same Circumstances as before, but their Brightness will be much less. The Crust reduced into Powder is likewise finer and more illuminating, when exposed to the Air, than the Stones. They fill little Bottles of fine Crystal with it closely stoppt, which they keep to give Light when they please; for they are not obliged to expose it to the Air, as they do the Stones, the Crystal not giving any Obstruction to the Light from the Powder.

One must not imagine that any of the several Circum-

Circumstances that I have shewn for the Calcination of the *Bolognian-stone* are useless; for they are so necessary, that if they be not all exactly observed, the Operation is lost, and the Stone will give no Light. This Stone acquires, by Calcination, a sulphureous Smell, like melted *Orpiment*; and when it is boiled with Lime and Water, it yields likewise a little *Arsenical Salt*.

The Reason why it appears light, proceeds from the Fire mixing with the Sulphur in its Motion, which raises to the Superficies an Infinity of Particles that are so subtil and delicate as to take Fire upon Light, or the Motion of the Air. But those who desire to be more fully informed in this Matter, may read what I have said in my Treatise of *Chymistry*, where I have spoken not only of this kind of *Phosphorus*, but of several others; and have likewise given you the Figure of a Furnace that is most convenient and proper for calcining this Stone, which is a *Depilatory*; and being powdered and mixed with Water to the Consistence of a Paste, may be applied to any Part of the Skin where there is Hair to be taken off. It is called *Phosphorus*, or *Lucifer*, from bringing of Light; and *Crysolapis*, from casting a Light of a golden Colour,

[The *Bolognian-stone* is the *Lapis Bononiensis*, *De Laet*. 206. *Charlt. Foss.* 20. *Lapis Illuminabilis*, *Aldr. Mus. Met.* 688. *Phosphorus Kircheri quibusdam Fosforo o Pietra lucida de Bologna*, *Boet. Obs. Nat.* 224. The making the *Phosphorus* of it is a very nice Thing, and very few have succeeded in attempting it. It is a violent and dangerous Emetick if taken inwardly, and externally a Caustick.]

18. Of the Pumice-stone.

Pomet. THE *Pumice-stones*, which the *Latins* call *Pumex*, are Stones of various Colours, Shapes, and Weight, being white, greyish, light, heavy, big, little, round, and flat. They are valued more or less according to the Occasion they are wanted for; for some esteem the white, others the grey, some the light, and some the heavy: Notwithstanding which, I must tell you, that the largest and lightest are most set by, especially for those who make Parchment, and Stone-cutters, who consume abundance; but the small are scarce used, but by the Pewterers, who reduce them into Powder. As to the flat *Pumice-stones*, they are used by the Curriers: In a word, the *Pumice-stones* are of such Use that we have scarce any Commodity whereof there is a greater Consumption, there being such abundance of Workmen that use them. As to Physick, the little Use

made of them: in it is not worth speaking of, save only that after Calcination and powdering, it makes a Dentifrice for the cleaning of the Teeth.

As for the Nature and Constitution of this Stone, I have not yet been able to come to the Knowledge thereof; wherefore I shall rest satisfied with what Authors say of it, namely, that it is a Stone thrown out of Mount *Vesuvius*, or Mount *Ætna*, and by the Violence of the Winds carried into the Sea, where it is found swimming on the Surface, from whence it is taken. Others say they are the Stones of Mountains that have been burnt by subterranean Fires. However, it is certain, that the *Pumice-stone* is a calcined Stone, because it is light and porous, or full of Holes, and that it has been in the Sea, or is of a salt Nature, forasmuch as all the *Pumice-stones* we sell are of a salt and brackish Taste, and full as it were of little Needles.

Pumex, or the *Pumice Stone*, is a Stone or Earth that has been calcined. *Lenery*. by subterranean Fires, thrown out by Eruptions of the Volcano's, and by the Force of Winds carried into the Sea, where it is found floating. There are several kinds of it, the large, small, round, flat, light, heavy, grey, white, &c. the most valued are the biggest, lightest, and the cleanest; they ought to be porous, spongy, of a salt, fenny, or marthy Taste, full of small Needles. They are found likewise in *Sicily*, near Mount *Vesuvius*, from whence they come; and in *Germany*, about *Conflans*, the *Moselle*, and the *Rhine*; they are alkaline, deterfive, drying, used for old Ulcers, sore Eyes, and to clean Teeth.

[The *Pumice* is the *Lapis Pumex dictus*, *Cup. Hort. Cath.* 2. 53. *Pumex*, *Kentm.* 37. *Beet.* 400. *Scyrus Lapis*, *Aldr. Mus. Met.* 696. It is found among the Sulphur about *Ætna*, *Vesuvius*, and other burning Mountains; as also in *Germany*, and other Places. It is often mixed with the *Os Sepiæ* in Tooth Powders; but has little other Use in Physick.]

19. Of the Aëtites, or Eagle-stone.

WHAT we call the *Eagle-stones*, are *Pomet.* certain Stones that are hollow in the middle, and contain in them a stony Nut or Kernel, that makes a Noise when we shake them. We commonly find four sorts of them, that are indifferently called in *Latin*, *Lapis Aëtites*, but the Kernel *Callinus*. The first sort is brown, oval, usually the Length of two or three Inches, and half a one broad, rough or knotty, and that takes a good Polish: The Second is something less than the other, and seems to partake much of Iron, for it

it is covered with an Ocre like the Iron Marcasites. The third sort is rough and uneven, as if it was composed of Fragments of little shining Flints of different Sizes, whereof some are brown, and others of a russet Colour, and some as it were transparent; and all these Flints are strongly knit together by a natural Cement, and most commonly nothing is found within it but some Grains of Sand. The fourth Kind is of an Ash-colour, and contains within it white Clay or Marle. This sort comes from *Germany*: The First and Second are found in the Bogs of *Cape St. Vincent* in *Portugal*, and in the Mountains near *Trevoux*, in the Principality of *Dombes*. It is now no longer believed that they are found in the Eagle's Nest.

It were to be wished that the Virtues attributed to the *Eagle-stone* were as certain as they are considerable; Authors affirming that it facilitates the Birth, if tied to the Thigh of a Woman in Labour, and that it hinders Miscarriages if tied to the Arm; they believe that reduced to Powder, and mixed in a *Gerate*, it lessens the *Paroxysms*, or Fits of the Epilepsy, if applied to the Head: It is also said, that the Marle or Clay that is found in the Hollow is sudorifick, and will stop the Flux of the Belly.

What I have said in the Chapter of the *Eagle* about these Stones, was in Concurrence with the common Opinion; and because I was not absolutely certain of the true History of them, but the Account here given of them is the more rational, and what is generally believed now.

Ætites Lapis, or the *Eagle-stone*, is a *Lemery*. Stone commonly round or oval, of the Bigness of a Walnut, and sometimes of a small Pullet's Egg, of a greyish or dark Colour, hollow in the middle, wherein is contained a sort of stony Kernel, that rattles in the Stone when you shake it. There are four Kinds [according to *Pomet's* Description] all which have great Virtues assigned them, which are altogether imaginary, Experience not confirming them with any Pretence of Certainty: It is astringent, and proper to stop Loosenesses and Hæmorrhages, taken inwardly; the Kernel, which is softer than the Stone, is more advantageous for all the same Purposes: They are called *Ætites*, that signifies *Aquilina*, or of the *Eagle*, because it was believed that the *Eagles* furnished their Nests with these Stones to preserve their Young.

[The *Eagle-stone* is the *Ætites*, seu *Aquilinus Lapis*, *Bact.* 375. *Worm.* 77. *Charlt. Foss.* 31. They are of various Bignesses and Colours, but generally of an oval Form. They are found in different Places; but those from the *Levant* are most esteemed. The Virtues ascribed to them are

wholly imaginary, and the Stories about them ridiculous.]

20. Of the Toad-stone.

THE *Toad-stone*, called in *Latin*, *Bufonites*, and *Batrachites* in *Greek*, is a Stone found in the Mountains, or the Plains. It has been believed that it was bred in the Head of an old *Toad*, whence it was voided by the Mouth of that Creature when put upon red Cloth: But *Boëtius*, and those who have made exact Enquiries after it, affirm that it is a Stone formed in the Earth. There are commonly two sorts, to wit, the round and the long: The round *Toad-stone* is of the Shape of a small Cap, round in the Circumference, hollow below, convex above, and very smooth, about half an Inch broad at the bottom; some of them are of a deep grey inclining to blue; and there are others of a reddish Colour; but both sorts are usually of a much lighter Colour at their bottom. The long *Toad-stone* is most frequently of an Inch long, and above four or five Lines thick, hollowed like a Trough on one Side, and of a convex Figure on the other: Some of those are of a deeper, and some of a lighter Grey, marked with some reddish Spots, and smooth as the round: They set them, especially the round sort, in Rings; but that is more for Ornament than any Virtue in them, for they are very uncertain in their Effects, especially in their allaying, as is pretended, the Inflammation occasioned by the Sting of Bees, or other Insects. It is false that it changes its Colour, and sweats when it approaches a Cup wherein there is Poison. Though *Boëtius* and others affirm, that the *Toad-stone* is found in the Ground, nevertheless I shall not contest or dispute, but that it may also be bred in the Head of old *Toads*, though it is certain what we now sell comes not from these Animals, but is found in the Earth, as has been observed. This Description of the *Toad-stone*, and that of the *Eagle-stone*, were given me by Mr. *Tournefort*, who is a Person on whom we may depend.

Bufonites, *Chelonites*, *Batrachites*, is a kind of precious Stone, whereof there *Lemery*. are two Kinds, one round, and the other long. The first is round in its Circumference, hollow on one Side, and convex on the other, in Form of little Cap or Bonnet, about half an Inch broad at the Basis, very smooth, sometimes grey, brown, black, green, and of various Colours. The second sort is sometimes more than an Inch long, and above four or five Lines thick [according to *Pomet's* Description.] The Size of these Stones are sufficient to undeceive those who believe that they

they are taken from the Heads of Toads; they are found in the Mountains, and the Plains where they are produced.

Some pretend, that being powdered and taken inwardly, they are capable of resisting the Plague and other malignant Diseases; that being applied to the stinging or bitings of venomous Beasts, they draw out the Poison. Some hang them about their Neck for *Quartan Fevers*; but all these Virtues are imaginary, for the *Toad-stone* has nothing in it but an alkaline Quality proper to absorb Acids, and to stop Looseness, taken from a Scruple to half a Drachm; but it is not in Use.

[The *Toad-stone* is *Bufonites Lapis*, *Ind. Med.* 23. *Bufonites Majusculus Atrorubens instar Capsulæ Glandis Quercinæ*, *Aët. Reg. Soc.* 200. *Luyd. Lithop. Brit.* 20. *Bufonius*, *Mer. Pin.* 210. They have been variously guessed at in regard to their Origin; but are in truth the *Dentes Molares* of the Sea Wolf. *Lupus Marinus*, *Schonf. Isth.* 45. *Charlt. Pis.* 31. *Lupus Marinus nostras* & *Schonfeldii Raii Isth.* 130. The Virtues ascribed to them seem altogether imaginary.]

21. Of the Lapis Amiantus.

Pomet. THE *Lapis Amiantus* is a Stone of a greenish Black without and within, pretty heavy, that being broken is almost like *Plumous Alum*, in that it rises in Threads of a whitish Green, or rather of a Horn Colour. This Stone is incombustible, and the Antients were not much deceived when they said the *Lapis Amiantus* and the *Plumous Alum* were the same Thing: There is notwithstanding some Difference, in that the *Plumous Alum* arises in long, and this in short Threads; besides, the Extremities of the *Plumous Alum* are not of a Colour with those of the *Lapis Amiantus*. This Stone is found in *Turkey*, for all that we sell comes from *Constantinople*; as to the Choice of it, or its Use, I know nothing, save that an incombustible Cloth is made of it, which is a very great Curiosity.

Amiantus, *sive Albeston*, *sive Albestos* *Lemery.* *Lapis*, is a Stone of a mineral Substance, or a kind of Talck that has a near Resemblance to *Plumous Alum*, several People confound one with the other, believing them to be the same Thing. It is found in two different Forms; for the one is in Filaments or Strings, like those of *Plumous Alum*, but much longer; the other is in a brown or blackish hard Stone, but that will spread under the Hammer. The Antients spun *Amiantus* and made incombustible Linen of it, which, amongst other Uses, served them to wrap their dead Bodies in when they burnt them to pre-

serve their Ashes: The Corps burnt while the Linen remained entire. This Stone is found in the Quarries near the *Pyrenees*. *Amiantus* is used in some Remedies; they believe it resists Poison, cures the Itch, and is deterfive.

[This is the *Amiantus*, *Boet.* 382. *Gesn. De Lap.* f. 6. *Amianthus*, *sive Asbestus*, *Ind. Med.* 8. It is of many Figures and Colours; some Pieces of it so much resembling the *Alumen Plumosum*, that by the Ignorance of those who gathered them, they have been sold to Druggists, &c. as such; though the Taste alone is sufficient to shew the Difference.

It is found in many Places; and among others both in *Scotland* and *Wales*.

It stands the Fire unhurt; which the *Alumen Plumosum* does not, and is not at all dissoluble in Water as that is.

It is of no Use in Medicine; there have indeed been many Virtues attributed to it, but they seem altogether imaginary.]

22. Of Cobalt.

COBALTUM, or *Kobaltum*, is a red- *Pomet.* dish hard Stone, that is heavy, and in Grains of the Size of our Peas, that stick several of them together upon a kind of Spar or Marcasite, like Antimony. This *Cobalt* is usually found in the Silver Mines, and is a Plague to the Workmen, being a dangerous Poison: For if by Chance it fall into the Water, and that the Miners be obliged to go into that Water, they are sure of having their Legs all ulcerated. This *Cobalt* is much different from that of some Authors, who have thought it to be *Lapis Calaminaris*; but they are grossly mistaken, since it is easy to see the Difference. As to its Uses, they are unknown to me, and its Scarceness makes that there is little Demand for it.

Cobaltum, *sive Kobaltum*, is a sort of Marcasite, or hard, heavy, reddish granulated Stone; many of which are collected together upon a mineral Body like Antimony. This Stone is composed of a kind of natural *Cadmy* that is found in the Silver Mines. It is a strong violent Poison, yielding a burning arsenical Salt, a Sulphur, and an Earth composed of some metallick Parts. It is caustick, and being applied externally, makes an Escar upon the Flesh, and eats off Excrecences.

[*Cobalt* is the *Cadmia Metallica*, *Werm.* 128. *Charlt. Foss.* 51. *Aldr. Mus. Met.* 256. *Matth.* 1338. *Cadmia Metallaris aliis Cobaltum Metallicis*, *Schw.* 370. *Cadmia fossilis ex qua preparatur Zaffera*, *Wood. Attempt.* ii. P. 1. p. 50. It is a ponderous, hard, fossil Substance, not unlike Antimony, or some

some kinds of the *Pyrites*, emitting a strong sulphureous Smell when burnt, often containing Copper, and sometimes Silver. It is dug out of Mines in *Saxony* and *Bohemia*, and in *England*, in *Mendip Hills*, but there not very common.

All the Kinds of *Arsenick*, as also *Zaffera*, and the *Encaustum Cæruleum* are obtained from it, as already mentioned in their respective Places.]

23. Of *Osteocolla*, or the Bone-Binder.

Pomet. THE *Osteocolla*, or *Bone-Binder*, is a sandy Stone, and porous like a Bone, whereof there are two Kinds; the one heavy, gravelly, uneven, and pretty round; the other light and less ragged. The *Osteocolla* is found in several Parts of *Germany*, where they call it *Benbru*, but chiefly near *Spires*, *Heidelberg*, and *D'Armstadt*. They pretend that this Stone has the Power and Faculty of setting a broken Bone when taken inwardly, as well as when applied to the Fracture.

Besides all these sorts of Stones already described, we sell several other Kinds, such as the *Asius Lapis*, or *Sarcophagus*, the *Serpentine* and *Blood-Stone*, which is a sort of *Marble* full of little red Spots, from whence it takes the Name of *Blood-Stone*; as also because it is pretended that it stops Blood; the *Star-Stone*, *Rock-Crystal*, *Alabaster*, the *Small Pox-Stone*, the *Astroites*, *Ostracites*, *Cross-Stone*, *Cornu Ammonis*, *Glossopetra*, and the *Rock* and *Madagascar Crystals*, and many

others, whereof several Authors have treated at large.

Osteocolla, *Ostiocolla*, *Osteites*, *Stelechites*, *Morochtus*, *Holosteus*, *Osteolithus*, *Lcmery*. *Lapis sabulosus*, *Lapis ossifragus*, or the *Bone-Binding Stone*, is a sandy hollow Stone, of an Ash or whitish Colour, having the Shape of a Bone, of different Sizes. Some are met with as big as one's Arm. We have two sorts of them; one round, uneven, or rough, sandy, and heavy, the other smoother and lighter; it sticks to the Tongue, like *Pumice-Stone*. Both kinds are found in several Parts of *Germany*, as the *Palatinate* and *Saxony*, where they grow in sandy Places. It is used to agglutinate and restore in a little Time broken Bones, being applied upon the Part, and taken inwardly at the same Time; Dose from half a Scruple to two Scruples. It is called *Osteocolla* from *Osteon* and *Colla*, which is as much as to say *Bone-Glue*.

[This is the *Osteocolla*, *Worm. 53. Charlt. Foss. 32. Osteocollus Crustaceus, Gesn. De Rar. Foss. 30. Ossifragus Lapis, Boet. 416*. It is a Spar of a middle Consistence, between Earth and Stone, and is found in many Places. Beside the Virtues which its Name expresses, it is esteemed a good Medicine in Fluxes of all kinds, particularly the *Fluor Albus*, but is seldom used. As to the other Stones, mentioned by our Authors, as they are never kept in the Shops, nor used in Medicine, I judge it will be but tedious to enter into a more particular History of them here.]



BOOK VI.

Of E A R T H S.

P R E F A C E.

In this Book are contained not only the Earths that are of Use in Medicine, but likewise those which are serviceable to Painters; in a word, all those Fossils that are soft and apt to crumble, and for this Reason have not been ranked among the Stones. I comprehend in this Book also whatever is made from Earths, and makes a Part of our Business. I have put into the Number of the Earths the Catecu, or Cachou, not because of its Likeness to an Earth, but that most People will have it to be one, according to its Name, as will appear in the following Chapter.

II. Of Cachou, Cashew, or Japan Earth:

Pomet. **C**ACHOU, according to Mr. Caen, Doctor of Physick, of the Faculty of Paris, suitably to what was communicated to him by one of his Friends, is an Earth that is found in the *Levant*, where it is called *Masquiqui*; it is usually met withal upon the highest Mountains where the Cedars grow, under the Roots of which this Earth is found, which of itself is very hard, and in a Lump. To lose nothing of this Earth, the Natives, called *Algonquains*, gather it up, Sand and all together, and wet it with River Water, and make it into a Paste, drying it in the Sun to the Hardness we see it of. The Natives always carry it about them, and use it for the Pain of the Stomach: They also apply it outwardly, like an Ointment, upon the Region of the Stomach.

Though this Description of *Cachou* appears not very conformable to Truth, because there is no Probability of its being an Earth; yet as the Person who gave this Description to Mr. Caen assured him that it was so, and so far as it is called in *Latin*, *Terra Japonica*, I was obliged to rank it in the Class of Earths, and leave it to those to determine what it is, who understood more of it than I do: All I shall say is, that you ought to chuse *Cachou* of a tawny red without, and of a clear red within; the brightest and least burnt that can be.

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Cachou is a very bitter Drug, and of an unpleasant Taste when first taken in the Mouth: It is usual to reduce it into a fine Powder, and to mix it with Ambergrise; which, with the Mucilage of *Gum Tragacanth*, is made up into a Paste, and formed into little Pellets, in Colour and Figure having the Resemblance of Mouse's Dung; and the smaller these Troches are made, the more valuable are they.

The Use of *Cachou*, whole or prepared, is to strengthen the Stomach, and to make the Breath sweet; and, in short, it is one of the best Drugs we have, and yet at this time the least used, since the great Use of Tea and Coffee; though *Cachou* is of much greater Virtues than either of them.

As *Cachou* is very unpleasant to the Palate, especially when first put into the Mouth, therefore some People, besides the Ambergrise, mix Sugar with it.

Other Accounts there are which make this Drug an inspissated Juice of two vegetable Substances, the *Arca* Nut, and the Bark of an *Indian* Tree, called by the Natives *Catecu*, with the Addition of Liquorice Root and Lime Water; and others, the simple Juice of a Tree, thickened with other Vegetables in Powder; others, that *Calamus aromaticus* and other Drugs are made Ingredients in it.

The Differences in Colour which we observe in this Drug may arise, either from its being made of different Species of the *Arca*, or from its having in it greater or lesser Proportion in it.

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It was unknown in *Europe* till *Garzies ab Orta* wrote of it; and, in all probability, when it gets more into Use will prove a very fine Medicine.]

Catechu, sive Terra Japonica, is a sort *Lemery*. of dried Paste, hard, a little gummy, reddish, having the Form and almost the Hardness of a Stone; of a bitter and austere Taste at the beginning, but leaving afterwards a soft and agreeable Impression in the Mouth. There are two sorts of it; the first and most common is compact, heavy, of a reddish brown Colour, streaked with little whitish Rays; the second is more porous, less weighty, and paler than the first. We are not sufficiently informed concerning the Nature of *Cachou*, some saying it is a Paste prepared by the Japanners with the Extract of *Areca*, *Calamus Aromaticus*, *Liquorice*, &c. mixed and hardened together over the Fire: Others pretend, that it is made with the Juices of *Areca*, and the green Bark of a thorny Tree of *Japan*, called *Catechu*, and thickened together by Heat: Others, as some Moderns maintain, that it is an Earth from the *Levant*, called *Masquiqui*, [as described by *Pomet*:] But, after all, *Cachou* does not appear to the Taste to be any thing of an Earth, but rather a thick Juice; besides, there is drawn from it, by chymical *Analysis*, a great deal of Oil and essential Salt, like what is drawn from Plants. It is good to strengthen the Brain, Lungs, Stomach; against Catarrhs, and to correct a stinking Breath.

[The *Japan Earth*, as it is called, is nothing more than the inspissated Juice of the *Areca* Nut, described in its proper Place, either simple, or mixed with other vegetable Juices or Decoctions; for we have two kinds of it common in the Shops.

The simple Juice we have from *Pegu*; it is cleaner than the other, of a more astringent Taste, and melts upon the Tongue; it is commonly in smaller Lumps, and composed of a great number of thin Strata lying one close on another, blackish on the outside, and of a paler mixed Colour within.

The Mixed is in large Lumps like Clods of Earth, it is brought from many different Parts of the *East-Indies*; and it is evident to the Taste, that the several Parcels of it from different Places, contain different Juices or Decoctions mixed with the *Areca* Juice in a greater or lesser Proportion.

The greatest Quantity we have of this is from *Malabar*, in which it is easy to discover two or three different Tastes; and a careful Dissolver may often discover two or three different Substances in it, for the *Facula* it deposits are not wholly of the vegetable kind. I have often found, in the Paper I have filtered, a Solution of this kind of *Terra Japonica* through a Matter resembling burnt Hart-

horn, which was probably the Calx of calcined Shells, which in some Places is used in making it. The different Tastes in the several Kinds of the mixed *Terra Japonica*, have led People of fertile Imaginations to guess different vegetable Substances as the Ingredients; among others, *Calamus Aromaticus*, *Liquorice*, and the rest named by our Authors; but, the Truth is, we are wholly ignorant what the Mixture consists of; and, in all probability, it may be of Drugs, of which not even the Names are known with us: It were, however, to be wished Apothecaries would only use the Simple, as I can, upon long Experience, affirm it to be more certain in its Effects; and, as in the other, we never are sure what we give, different Parcels of it containing different Ingredients.]

2. Of Sealed Earth.

Terra Sigillata, or *Sealed Earth*, is a *Pomet*. kind of white *Bole*, sometimes a little reddish, that is moistened with Water, and afterwards formed into little Cakes, roundish, of the bigness of one's Thumb, upon which are stamped several Characters. The Variety of Figures, Colours, and different Seals that are found upon the *Terra Sigillata*, makes me think that every one makes it up according to his Fancy; and that it is nothing but a fat astringent Earth, more or less coloured, reduced into such Cakes as are brought us. I shall not stop here to relate all the fabulous or true Stories which the Antients have told concerning the Place whence this Earth comes, and the Ceremonies used when it is gathered, nor how the *Grand Signior* signs it with his own Seal, &c. but I shall tell you, that the Earth that is most used and esteemed, is that which is in little reddish Cakes, the least sandy or gravelly, and the most astringent that you can get.

It is much used in Medicine, because of its astringent Quality: It is also an Ingredient in the *Venice Treacle*, and needs no other Preparation than to be clean and have the above described Qualifications.

As to the Earth of *Lenxos*, it is the same with the Sealed Earth, but in its natural State, without any Impression upon it.

Terra Sigillata, Terra Lemnia, Sealed, or *Lemnian Earth*, is a kind of *Bole*, *Lemery*. or fatty, clayey Earth, that is dry, soft, and fryable; sometimes yellowish, whitish, or reddish; insipid and astringent to the Taste. They bring it sometimes into the Isle of *Lemnos*, but it comes at present from *Constantinople*, *Germany*, *Blois*, and several other Parts. It comes ordinary formed into little round Cakes about the thickness of one's Thumb,

Thumb, roundish on one Side, and flat on the other, by a Signet engraved with some Arms or certain Devices that the Prince of the Country causes to be put upon it; and this is the Reason why it is called *Sealed Earth*. That of the Ancients was yellow, and made into Cakes much smaller than these at present are; and had engraved upon them the Representation of a Goat.

Chuse your sealed Earth that is soft to the Touch, clayey, apt to crumble, and of a whitish red Colour, that will cleave to the Tongue. They tinge or colour it sometime with Turmeric, or some other Drug, to make it come up to the Colour of the Ancients, which was the true *Lemnian Earth*, and was taken from a Hill where no Plant grew. The *Turks*, who are the present Masters of it, mix this with other Earths of the same Nature; and having kneaded them together with Water, make them up into little round Cakes, which they seal with the *Grand Signior's* Signet to make it pay Duty. This Earth is a good Antidote against Poison, proper for Fluxes, Hemorrhages, Gonorrhœa, Whites, and Vomiting. Dose from half a Scruple to two Scruples. It is outwardly used to stop Blood, dry up Wounds, and strengthen the Joints.

[The true *Lemnian Earth* is yellowish with Specks of brown, this is sometimes to be met with unsealed, and in its natural State; the sealed used in the Shops is of two kinds, the white and the red, the red is most esteemed, and is the *Terra Lemnia rubra Worm. 10. Charlt. Foss. 5. Terra sigillata Turcica rubra. Mont. Ex. 14.* It is a fat viscid slippery Clay of a pale red Colour, it is brought to us in Cakes of about three Drachms weight, sealed, and is dug in the Island of *Lemnos*, and many Places in the *Turkish Dominions*.

The white is the *Terra Lemnia sigillata Alba Worm. 9. Charlt. Foss. 5. Terra sigillata Turcica Alba. Mont. Exot. 14.* It is less fat and of a more astringent Taste than the other, and is dug only in the Island of *Lemnos*; but both this and the other are often counterfeited. Beside these there is also another kind.

Great Virtues were always ascribed to these Earths, and a Number of idle Ceremonies used in the digging them. At present it is a matter of some Ceremony; for there is but one Day in the Year in which the Pits are opened for the digging them, and the *Greek Priests* assist at the Ceremony, and rehearse certain Forms of Prayer.

They are good Medicines in Dysenteries, Hemorrhages, &c. if genuine, but are so seldom found so, that they are grown almost entirely out of Use. There are beside these a Multitude of

other *Sealed Earths* common in the Shops, but they are most of them Counterfeits, made up of different Mixtures of Tobacco-Pipe Clay, and red or in yellow Oker.]

3. Of Fine Bole, or Bole Armoniack.

IF we have several Sorts of sealed Earths, *Pomet.* we have not less of *Boles*, whereof the most esteemed is that which has its Name from the *Levant*, or *Armenia*, either because it formerly was brought from those Parts, or that those who deal in it may make it sell the better; but as I have never seen any of that, and what we now sell is found in several Parts of *France*, I must inform you the best is that we have from about *Blois* and *Saumur*, or from *Bourgogne*, and which is of various Colours, as grey, red, and yellow. The yellow is the most valued, because it passes the readiest for the true *Bole* of the *Levant*, and because it fits the *Gilders* best.

As these *Boles* are the dearest, because of the Charge of transporting them to *Paris* from *Blois* and *Saumur*, we prefer that of *Baville* and other Places about *Paris*, because the Peasants bring it us at a cheaper Rate than we can buy the other. All these kinds of *Bole* to be good must be tender, friable, soft in handling, not sandy, shining, and astringent to the Taste, that is to say, such as, when you put them to the Tongue or Lips, you cannot easily get them off. They are very drying and astringent, good against Fluxes and Gleet, thicken thin Humours, resist Putrefaction, and expel poisonous Bodies. They are likewise used in spitting of Blood, bleeding Wounds; and also to consolidate broken Bones, and strengthen weak Limbs.

Bolus, or *Bole*, is a soft, brittle, reddish, or yellow Earth, which is brought *Lemery.* us in Pieces of different Shapes and Sizes.

The finest comes from the *Levant* and *Armenia*, called *Bolus Orientalis*, *sen Bolus Armeni*; but all the *Bole* we have, which is in use amongst us at present, is brought from several Parts of *France*, and the best is about *Blois* or *Saumur*. As there is found in the Quarries or Pits a great deal of coarse or gravelly *Bole*, they wash it to free it from the Gravel, then make it into a hard Paste, which they form into square Sticks about a Finger long, which is called *Bole in the Stick*, and which is used externally. *Bole* is astringent and desiccative, proper to stop Looseness, Dysentery, Spitting of Blood, to sweeten the Acids, being taken inwardly. There is also a great deal used externally to stop Blood, prevent Fluxion, and strengthen and consolidate.

solidate. That which is called white *Bole* is an astringent Marle, but not so efficacious as the red *Bole*.

[There are many different kinds of *Bole* mentioned by different Authors, but the two in principal use at present are, the *Bole Armenick*, and *Bole of Blois*. The first is the *Bolus Armena orientalis* Mont. Ex. 13. *Bolus Orientalis* Charlt. Foss. 5. *Bolus seu terra Armenia* Aldr. Mus. Met. 269. *Bolus Armenius verus* Kentm. 7. It is to be observed that the true *Bole Armenick* is almost wholly unknown in the Shops. It is brought from *Turky*, and is of a Saffron Colour. What we sell under the Name of *Bole Armoniack*, is a kind of pale red Oker from *Spain* and *Normandy*, and what is much more common than that in the Shops of our petty Druggists is a Mixture of *English* red Oker and Pipe-makers Clay, formed into Cakes and dried.

The *Bole of Blois* is the *Bolus Blesensis* Ind. Med. 21. It is a fine Earth of a yellowish red Colour in thin beautiful Strata, but is very seldom found genuine in the Shops, what is commonly sold by our Druggists for it being only a red Oker and Pipe-makers Clay, like the common *Bole Armenick*, only with less Proportion of the Oker. The *Bole* mentioned by *Galen* was the same with that of the later *Greek* and *Arabian* Authors, his being described to be pale, and their's of a Saffron Colour.

The other *Boles* mentioned by Authors are 1. the *Bolus Bohemica*, the *German Bole*. 2. *Bolus Gallica vulgaris*, red *French Bole*. 3. *Bolus Toccaviensis*, the *Transylvania Bole*. 4. *Rubrica Synopica*, Earth of *Sinope*. *Bolus Armena lutea*, yellow *Armenian Bole*. 6. *Bolus candidus*, white *Bole*. And 7. *Bolus Armena Alba*, white *Armenian Earth*. But none of these are now ever prescribed, or kept in the Shops.]

Of Oker.

Pomet. THE yellow and red Oker is one and the same Thing, for the natural Colour is yellow, and it is turned red by Means of a reverberating Furnace, in which they put it, to make it red by the Force of the Fire: The best Mines of Oker in *France*, are in *Berry*; and among the rest, one is at a Place called *St. George*, upon the Side of the River *D'Ucher*, two Leagues from the City *Pierzon* in *Berry*, where they dig it out of the Earth, as they do Pit-Coal. This Oker is found 150, or 200 Feet deep in the Earth, from four to eight Inches thick; they find under this Oker a white Sand, like that of *Calais*, and above the Oker a yellow Clay good for nothing.

There comes likewise a yellow Oker from *England*, which is browner than that of *France*, but not so good, because it is naturally drier; it comes from a stony Earth which they are forced to grind in a Mill; whereas that of *Berry* is natural, fatter, and works better in Oil; so that the *Dutch* cannot use the *English Oker*, but when they mix it with an equal Share of that which comes from *Berry*.

Both Sorts are used by the Painters; but that which is most set by, is that which is dry, soft, friable, of the highest Colour, and least gravelly.

There comes beside a *Red Oker* from *England*, which we commonly call *Brown Red*; this is used by the Painters; but that which is of a much deeper Colour is called *Putty*, and they employ it in polishing of Glass.

Ochra, in *English Oker*, is a Mass of Earth that is dry, fat, will crumble, and *Lemery*. is soft to the Touch, of a yellow or Gold Colour, that is taken from some deep Pits in *Berry*. They calcine it in the Fire, 'till it gains a red Colour, and then it is called *Red Oker*; both sorts are used by the Painters; they are resolute, drying, astringent, being externally applied.

[Oker is a kind of Earth found in *England*, and many other Places. It is of two principal kinds, the yellow and the red, and both natural, and dug out of the Earth in great Plenty. Tho' it is also true, as common Experience shews, that the yellow will become red in burning. The natural *Red Oker*, Ruddle, or Marking-stone, is the *Rubrica fabrilis* Merr. Rin. 218. *Rubrica* Charlt. Foss. 2. Worm. 4. It is weighty, of a deep red, and of an astringent Taste, and is dug in *Herefordshire*, *Hampshire*, and *Lancashire*. It is drying and astringent, but is seldom prescribed, tho' very frequently used as a part of the common *Bole* as mentioned in the last Chapter.

[The yellow is the *Ochra* Aldr. Mus. Met. 255. *Ochra Fossilis seu nativa crocei coloris* Dougl. Ind. 64. *Ochra nativa seu sil. Gosleriensibus* Kentm. 8. It is of a strong yellow Colour, and astringent Taste, but is never used in Medicine.]

5. Of Terre Verte.

WE sell two sorts of *Green Earth*, to wit, that of *Verona*, which is Pomet. brought from about *Verona* in *Italy*, whence it takes its Name, and the common *Green*.

The Earth of *Verona* ought to be stony, and as green as may be, and take care that it be not inlaid with Veins of Earth.

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The common Green ought also to be of the greenest, and as near resembling that of *Verona* as you can get.

Terra Viridis, in *French*, *Terre Verte*, *Lemery*. is a dry Earth, of a green Colour, which is brought from *Verona* in *Italy*, and is for the Painters Use.

[This is an Earthy Substance, impregnated with Copper, to which it owes its Colour. It is found in many Countries, particularly in *England*, about *Godscalp* in *Cumberland*, adhering to the Sides of the great Copper Vein there, being brought by the Water which is perpetually trickling down the Sides.

It is used by the Painters, but not in Medicine. The Sort commonly used by them is brought from the Pope's Dominions, and is found in Mountains not far from *Rome*; it is somewhat unctuous, and adheres slightly to the Tongue. It needs no farther Preparation for their Use than being powdered and ground with Oil, and makes the most true and lasting Green of any simple Body they use.]

6. Of Cologne Earth.

Pomet. **C**ologne Earth is an Earth altogether like that of *Umber*, excepting only that it is browner: This is of some Use to the Painters. You must chuse such as is tender, easy to crumble, the cleanest, with as little Mixture of Dirt as possible.

7. Of Umber.

UMBER, so called because of its being used in drawing Shades, is brought to us from *Aegypt*, and other Places of the *Levant*, in Lumps of different Bigness.

In the Choice of this Earth, you ought to take that which is soft, in large Pieces of a brown Colour inclining to the red, for this is better than the grey.

Its Use is for the Painters, and before it is ground it is usual to burn it, as well for Painting in Oil as for the Glovers, which makes it become more reddish; the Fume of it ought to be avoided, as being stinking and offensive.

8. Of Tripoly.

Pomet. **T**HE *Tripoly* is of two kinds in *France*; the one they bring from *Poligny* near *Remme*, in the lower *Bretagne*; the other from a Place called *Alana* near *Rion* in *Auvergne*. That of *Bretagne* is most esteemed, and the best, being more proper for *Lapidaries*, *Goldsmiths*, *Braziers*,

and all other Workmen: It is taken from a Mountain at twenty or thirty Feet of Depth, and is found in Veins or Beds of about a Foot Thickness: They carry it to *Redon*, where it is shipped and transported to *Nants*.

That of *Auvergne* is not so valuable, being not at all fit for the Use of Jewellers, Goldsmiths, or Braziers, because it has not Substance; it rises into thin Leaves like Paper, when it is dry. It is only used for scouring Household Stuff, and is found almost in the very outer Surface of the Earth.

'Tis said that *Tripoly* is a Stone that becomes light by Means of certain Veins of sulphurous Earth that have burnt under the *Tripoly*, and which gives it the Quality of whitening, polishing, and brightening the Copper.

There are also Mines of *Tripoly* in *Italy*, and other Places; but as this Commodity is of little Value and Consumption, it is not much sought after; besides which we have it in *France*, and there is no Occasion to bring it from other Parts.

Alana, in *French* *Tripoly*, is a light white Stone, tending a little to the *Lemery*. red, which they take from several Mines of *Bretagne*, *Auvergne*, and *Italy*. 'Tis believed that the Lightness of this Stone proceeds from its being calcined by the subterranean Fires. We have two sorts in *France*; the first, and the best is that from a Mountain near *Remme* in *Bretagne*. It is found laid in Beds of about a Foot thick, and is used by the *Lapidaries*, &c. to whiten and polish their Works. The second Sort is brought from *Auvergne*; this divides itself into Flakes or Leaves, and is of no Use to the *Lapidaries* or *Braziers*, but serves to scour Pots and Kettles, and other Utensils belonging to the Kitchen: It is deterfive and drying applied outwardly, but is not used in Medicine.

[The Officinal *Tripoli* is the *Tripolis*, *Schrod.* 320. *Terra seu Gleba Alana. Call. Mus.* 131. It is an earthy Substance of an astringent Taste. It is of many Uses among Workmen in different Trades, but is never heard of in Medicine, tho' some have commended it as an Astringent.]

9. Of Indian Red.

THE *Indian Red*, or *Persian Earth*, *Pomet*. is what we improperly call *English Red*; it is a very dear Drug, especially such as is in little Pieces, moderately hard, and of a high Colour. This Red is used by none but the Shoemakers, who steep it in the White of an Egg to colour Shoe-Heels with.

We have besides these several other Sorts of Earths as they come from the Pits; as *Marle*, that some

some sell by the Name of *White Bole*, and many washed Earths; as *Roüen White*, that of *Seve* and *Port Neuille*, *Champagne Chalk*; there are also others which we know of, but sell none, as the *Smeētis*, commonly called in *England*, *Fuller's Earth*, which is a fat, smooth, sticking Earth that is heavy, sometimes blackish. This is much used by the Clothiers in *England*; and because this Earth does almost the same Thing as Soap, the *Latins* call it *Terra Saponaria*, or *Soap Earth*. As also the *Mexican Earth*, a very white Earth, which the People of *Mexico* make use of to whiten with, and in Medicine like Ceruse; likewise it serves to polish Silver.

The *Marga*, which is a kind of white Stone very like *Champagne Chalk*. The *Lithmarga*, or *Stencmarga*, which is what we call *Stone Pith*, or *Mineral Agarick*, or *Moon Milk*; this Stone is found in the Chinks or Apertures of the Rocks in several Parts of *Germany*; and different Names have been given to this Stone; it is very white and crumbling, and this Whiteness comes from its being calcined by the Vapours which arise from Metals.

There are, besides, several other Sorts of Earths, as the *Evetrian Earth*, the *Samian Earth*, *Chio*, *Selinusian* and *Cimolian Earths*, and *Tobacco-pipe Clay*; with many others, whereof several Authors make mention.

As to the Preparation of Stones or Earths, that is done ordinarily two Ways, that is to say, by grinding on a Porphyry or Marble, in like Manner as Pearl, Hyacinth, Topazes, Emeralds, Sapphires, Corals, Loadstone, *Lapis Calaminaris*, Tutty, and the like, are ground. The second grinding in a Mortar with Water, in order to get the fine Powder, as we do Litharge, Ceruse, and Minium. The first, after they have been levigated, are made into Cakes with Rose Water, and the others into Tablets with common Water.

Terra Persica, or *Indian Red*, is a Lemery. dry red Earth that is brought us in little

Stones that are of a moderate Hardness. The Shoe-makers use them to dye Shoe-Heels red; chuse the deepest coloured. *Terra Saponaria*, in *French* *Smeētis*, or *Fuller's Earth*, is a kind of slippery glutinous Earth, that is heavy, of a yellow or blackish Colour, and does the same Thing as Soap, whence it was called *Soap Earth*, or the Earth the Fullers use to scour with. The *Terra Selinusia* is a greasy or clayey Earth, that is very like that of *Chio*; it is astringent and resolute, proper to take away Spots and Chops of the Skin, to soften Tumours of the Breast and Testi-

cles, and to resolve. The *Chio Earth* is a kind of sealed Earth, or a fatty, sticky, ash-coloured Earth, that is brought from *Chio*: it is astringent, and removes Spots, &c. *Terra Samia*, or *Samian Earth*, is what comes from the Isle of *Samos*, and is of two kinds; one is soft, white, and crumbling, that sticks to the Tongue when applied to it, and is very like *Sealed Earth*. Some People call it *Collyrium*, because it serves sometimes to relieve the Eyes; the other is crusty and hard, tho' something unctuous; they call this *Samius Aster*, because it is found in shining Spangles, like Stars.

Besides these, there is *Marga*, *Lithomarga*, *Stenomarga*, *Medulla Saxorum*, *Agaricus Mineralis*, *Lac Lunæ*, or *Stone Pith*, *Mineral Agarick*, or *Moon Milk*, which is a kind of soft, friable, pithy, very white Stone, resembling Chalk, which is found in the Clefts of Rocks in some Parts of *Germany*; it is deterfive, astringent, drying, consolidating, dissolves coagulated Blood, and may be used inwardly and outwardly.

Mr. *Pomet*, at the End of his Chapter of the Fossil, Unicorns Horn, observes that there is some of this *Stone Pith* found on the Side of the Signiory of *Moscau*, belonging to the Elector of *Saxony*, and near *Gironne* in *Catalonia*; where the Inhabitants chuse from among this Earth, after the Sun is down and has warmed it, little Balls like Meal, with which they make Bread, mixing it with some true Flower, which has been confirmed by several other Naturalists.

[The *Persian Earth* is got in great Quantities in the Island of *Ormuz* in the *Persian Gulf*, and carried thence to *Surat*, *Bengal*, and other Parts of the *East Indies*, where it is used in painting Houses, Ships, &c. It is a red Oker, and we have in *England* an Earth of a brighter Red, and much preferable to it, found in the Fissures among Iron Ore in the Skrees in *Cumberland* and elsewhere.]

The Earths afterwards mentioned by our Authors, and a Multitude of other Marles, Chalks, and Clays beside, hold their Places in the Catalogues of Official Minerals of several Authors, but as they are scarce ever prescribed, or kept in the Shops, it would be but tedious and unnecessary to give the History of each of them in this Place; instead therefore of swelling the Book with that, I shall add, in the few following Pages, a short Account of such Drugs as are in Use among us, and are not mentioned by our Author, some of which I suppose he omitted thro' Forgetfulness, and others to have been only known since the time he wrote.]

A P P E N D I X

T O

P O M E T's *History of* D R U G S.

C H A P. I. Of B I T U M E N S.

Of Barbadoes Tar.

BARBADOES Tar, as it is commonly, but improperly, called, is the *Pisselæum Indicum* *Offic. Bitumen Barbadenſe*, Boerh. Chem. *Pix Barbados*, Boerh. Thesaur. Pharm. 108. It is of the Number of the liquid Bitumens, and is about the Consistence of Tar, of a dusky reddish black Colour, and strong bituminous, disagreeable Smell. It is brought to us from the Islands of *Barbadoes*, *Nevis*, and *St. Christophers*; but used to be most plentifully from the first, whence it had its Name. It oozes out of the Earth in small Quantities in many Places, and is generally found in digging at about fifteen or twenty Feet from the Surface of the Earth, mixed with Water; but what we receive of it is in general not dug, but gathered from the Waters, on which it swims like the *Asphaltum*, and some other Bitumens, having found its way into them by oozing from their Banks or Bottoms; this is preferred to what is dug, not only because it is more easily come at, but because it is cleaner, and of a better Smell; the first is owing to the washing it has in Storms, and the last to the Exhalation of some of its fetid Oil by the Heat of the Sun.

It is a coarse unpleasant Medicine, but certainly an admirable Balsamick; and the common People, by whom it is much more used than by the Apothecaries, find it of great Efficacy in obstinate Coughs, and many Disorders of the Breast, but they have sometimes found Mischief enough by it, by not knowing the general Caution, of avoiding all Things of this Class in Inflammatory Dispositions.

Externally, which was the first Way it came into Use, it is a good Digestive: and is a mighty Remedy with some for Agues, tied about the Wrists and Feet.

Beside these Virtues, which indeed are more known and oftener experienced by the common People than by those who deal in it, it serves our *London* Druggists and wholesale Apothecaries in two different Capacities; mixed with a small Quantity of Oil of Aniseed, it makes the famous Balsam of *Chili*, so much talked of some Years ago, and of which some Persons have yet a great Opinion; and a small Quantity of it put into Oil of Turpentine, turns it into what they call and sell for Oil of Spike.

As to the Choice of it; it ought to be clean, clear, and fluid, of a middle Colour between common Tar and Treacle, of a nauseous bituminous Taste and disagreeable Smell.

C H A P. II. Of Oil of Earth.

THE Oil of Earth, *Oleum Terræ* *Offic. Lem.* Ind. 388. is a thin, fluid Bitumen, very inflammable, of a nauseous Taste, and sulphureous, penetrating, disagreeable Smell; it oozes out of Rocks on the Sides of Mountains in *Asia*, *Persia*, and the *East-Indies*, and is of two Kinds, the red, and the black, as it is called, though that truly is of a dusky purple Colour; both kinds are found in the same Mountains, the dark-coloured near the Foot of the Mountain, and the red higher up. They have been brought to us from many different Parts of the *East-Indies*, but are seldom used or kept in the Shops at present, the *Petroleum*, of which they are also a kind, being generally sold in their Places.

Authors,

Authors, however, are too hasty in affirming them to be the same with *Petroleum*; their having the same Production is but an idle Reason, and I have at this Time before me a small Quantity of the dark-coloured Oil, given me by a Person of Veracity, a Surgeon of an *East-India* Ship, who caught it from a Rock himself in the Island of *Sumatra*, which is evidently different from all the Kinds of *Petroleum* I have yet seen, both in Taste and Smell, in both which it evidently shews that it contains a Sulphur not to be found in any of the other liquid Bitumens.

Beside this natural *Oleum Terræ* of the *Indies*, there is sometimes brought from thence a thick brownish Oil, of a fat insipid Taste, and without Smell, called also *Oil of Earth*; this generally comes in earthen Vessels, and is seldom found in the Shops, but often carefully kept and much esteemed by Persons who have been in the *East-Indies*, and seen the Cures that have been attributed to it. It is a compound Oil, made principally by the *Chinese*, from certain medicated Earths crumbled to a kind of Powder, and boiled in an expressed Oil made from the Fruit of one of the *Cocoas*.

The natural *Oleum Terræ* is in great Esteem with the Natives for all cutaneous Eruptions; they take it inwardly, about half a Dram for a Dose; and use it externally also as an Ointment to the Sores: They also give it to Children in Convulsions, and to their Women in Labour. With us it is scarce ever seen or used.

The factitious is their great Remedy against the Bites of envenomed Creatures, and their most esteemed and general external Application in Tumours of all kinds.

As to the Choice of these Oils, little need be said, they are so seldom to be met with genuine now; however, the sulphureous Smell which is peculiar to the first kind distinguishes it from all others. The other, if it were of common Sale, might be easily counterfeited, but as it is only to be found in the Hands of those who have themselves imported it, there is no great fear of its being other than genuine.

C H A P. III.

Of S T O N E S.

Of Irish Slate.

IRISH Slate is the *Lapis Hibernicus Offic.* *Lapis fissilis Hibernicus Charlt. Foss. 13.* *Ardesia Hibernica, Tegula Hibernica, Ind. Med. 57.* It is a heavy, fattish, flaky Stone, soft, and of a bluish or greyish Black, of an aluminous and earthy

Taste, and without Smell; it is dug in many Places in *England* and *Ireland*, and we have it brought to the Shops in Glebes of different bignesses.

It is by some said to be a good Medicine in Intermittent Fevers, but its great Use is in Contusions and inward Injuries, in which Cases the common People found great Benefit by it, and long used it before it was known in the Prescriptions of Physicians; it has, however, of late been found to exceed almost all Things in Hæmorrhages of all kinds.

As to its Choice little need be said, as it is too cheap to be worth adulterating; the softest and such as separates into Flakes the easiest is the best. One thing, indeed, I may add as a Caution, though I hope unnecessary, which is, to see that there is not Cobalt accidentally mixed among it: It is a thing not likely to happen often, but as I have known two Instances of it, and as it is a thing of very fatal Consequence if it does happen, I thought it well to mention it. The Description given already of Cobalt in its proper Place, will shew how to distinguish them, which indeed is very easy were it only by the different Hardness; and the Instances I have known of it are; the one, the Death of a poor Woman, who perished within a few Hours after taking it, and had all the Symptoms of those who have been poisoned by Ratsbane; and the other, that among a Quantity I bought in the Year 1742, I found a fair Piece of Cobalt, of more than four Ounces weight, which I still have by me: This convinced me, that I had before guessed right, in my Opinion of the Occasion of the Woman's Death, and obliged me to throw away the Parcel of *Lapis Hibernicus* it was among, as I would advise every one to do wherever any of it is found, small Pieces of it being not easily discoverable among the small Pieces of the other, and a very little of it being sufficient to produce fatal Consequences, as it is the strongest of all Poisons.

C H A P. IV.

Of V E G E T A B L E S.

Of Moxa, or China Gout-Cotton.

THE *China Gout-Cotton*, as it is called, or *Moxa* of the Shops, is a thready Substance, made of the fibrous Parts of the Leaves of *China Mugwort*. The *Artemisia Chinensis, cujus Mollugo Moxa dicitur, Plu. Phytogr. Tab. 15. Hist. Ox. 3. 5. Artemisia Orientalis, vulgaris facie, Act. Philos. Lond. N° 276. Musia Pattrw. Malab. Moxa, Kempf. App. 27.* It is of no other Use in Medicine than the laying a small Heap of it upon the

the Foot, and burning it there, as a Remedy for the Gout. Its Virtues on this Account have been much celebrated, but there do not seem many at present who have any great Faith in the Accounts.

C H A P. V.

Of Couhage, commonly called Cow-itch.

COUHAGE, commonly called *Cow-itch*, is a downy or hairy Substance, growing on the out-side of the Pod of the *Couhage* or Stinging Kidney-bean of the *East-Indies*; the *Phaseolus Zurattensis siliqua hirsuta Couhage, dicta, Rai. Hist. 1:881. Phaseolus siliqua hirsuta, Park. 1056. Phaseolus pruritus excitans hirsutis siliquarum, Ger. En. 1215. Phaseolus Zurattensis siliqua hirsuta pungente, Hist. Ox. 269.* The Pods of this Plant are smaller, shorter, and rounder, than those of the common Kidney-bean; and the Hair that invests them, plentiful, short, and of a shining Brown: They are brought to us from the *East-Indies*.

The Down or Hair is of no Use but to play Tricks with, causing a troublesome Itching wherever it touches the Skin: The Beans taken out of the Pod, and reduced to Powder, are a common Medicine in *Barbadoes* for the Dropsy.

C H A P. VI.

Of Cassumunar.

CASSUMUNAR, called also *Cassumuniar*, *Casmunar*, and *Rysagon* or *Risagon*, is the Root of the *Zedoaria Radice lutea, Breyn. Prodr. 2. 105. Zerumbeth seu Zinziber rubrum sylvestre, Ternatense. Camel. Syll. 65.*

It is a tuberosé Root, of the Thickness of one's Thumb, and covered with Protuberances like those of the *Galangal*; of a dusky brown on the outside, and a pale yellow within; of a bitterish aromack Taste, and agreeable Smell.

It is brought to us by the *East-India* Company from *Bengal* and *China*; it is a noble Medicine, and found of great Use in all nervous Cases, Apoplexies, Palsies, Vertigoes, and hysterick and hypocondriac Affections; it is also carminative and astringent.

It is to be chosen in large Pieces, sound, firm, and hard to powder; of a bright yellow within, and of a piercing lively Smell, and aromack Taste.

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C H A P. VII.

Of Salep.

SALEP, called also *Saleb*, and *Serapias* in the Shops, is the Root of the *Orchis fœmina procerior majore flore, Tourn. Herb. Par. 508.* which indeed seems to be no other than our common female Orchis. The *Orchis morio fœmina, Park. 1347. C. B. Bin. 82. Cynosorchis morio fœmina, Ger. 158.* with the Advantages of a warmer Climate, in which it grows to a greater size.

It is a whitish oblong Root, a little flatted and wrinkled in the drying, tough and hard to be powdered, of a Taste somewhat resembling Gum Tragacanth, and without Smell.

It is brought to us from *Turkey* and *Persia*, and grows in the greatest abundance and perfection on the Mountains of *Bursia* near *Constantinople*.

It is a great Restorative, and is good in all Decays; it is also esteemed a Provocative and Remedy against Barrenness. The *Turks* have it in great esteem; their manner of taking it is boiled with Honey, Ambergrise, and Ginger, and drank hot in the manner of Chocolate. The general manner of using it here, is to put about a Tea-spoonfull of the Powder of it into a Basin of warm Water, which it turns into a Jelly.

It is to be chosen firm, hard, and tough; and the great Caution is, that it be neither worm-eaten nor mouldy.

C H A P. VIII.

Of Elatherian Bark.

THE Elatherian Bark, called also the *Indian Bark*, and *Cascarilla*, is the *Cortex Thuris nonnullis dictus vel Thymiana, Rai. Hist. 2. 1841. Schakarilla Chakarilla, Mont. Exot. 8. Elaterii vel Elatherii Cortex Thymiana, Schrod. 4. 166. Palo de Calenturas quibusdam Eleaterium, Lem. Ind. 203.*

It is a thin firm Bark, rolled up into hollow Quills, as they are called, like the *Cortex Peruvianus*, commonly in small Pieces of the thickness of Cinnamon, smooth, and of a dusky brownish Colour; for it is generally brought to us stripped of its outer Rind, which is of a whitish Grey, and rough. It is of a sharp aromack bitter Taste, and an agreeable Smell, something like that of Amber.

There have been various Conjectures about the Tree which produces it, some believe it to be
C c the

the *Νάγκαφρον* or *Νάγκαφρον* of *Dioscorides*, lib. i. c. 22. and *Cæsalpinus*, *Amatus*, *Parkinson*, and *Caspar Baubine*, have all different Opinions about it, which of them, or whether either of them is in the right, is yet unknown.

It is sometimes brought from the *East-Indies*; but we have it principally from *Elatheria*, one of the *Bahama* Islands, whence it has its Name.

It was first taken notice of for an agreeable Oil which it yields by Distillation, which was formerly much used to put into Snuff, to give it an agreeable Smell; but it is now come into Use internally, Mr. *Stahl* having strongly recommended it as an excellent Medicine in Disorders of the Lungs, and a good Stomachick. *Apenus*, a German Physician, has also written a Treatise about it, in which he praises it in malignant Fevers, the Plague, Dysenteries, and Weakness of the Intestines.

It is to be chosen light, but firm, smooth, and of a lively agreeable Smell, and as fresh as may be, for it loses much in keeping.

CHAP. IX.

Of Elaterium.

E L A T E R I U M is the inspissated Fæculæ of the Juice of the Wild Cucumber, the *Cucumis Agrestis*, sive *Afinius*, *Park.* 161. *Cucumis Elaterium*, *Rivini Rupp. flor. gen.* 41. *Cucumis Elaterium Officinarum*, *Boerb. Ind.* 77.

It is usually met with in small flat whitish Lumps or Cakes, dry, and easily breaking between the Fingers; of an acrid nauseous bitter Taste, and strong disagreeable Smell when fresh made; but that, as also indeed a great part of its Virtue, it loses in keeping.

What we have of it is brought from *Spain* and the southern Parts of *France*, where the Plant is very common.

It is a very violent Purge and Vomit, and is now very seldom used; the Dose is from two to four Grains. The lightest, cleanest, and freshest is to be chosen.

CHAP. X.

Of Jamaica Pepper, or All-Spice.

P I M E N T A, or *Jamaica Pepper*, is the dried unripe Fruit of the *Myrtus arborea foliis Laurinis aromatica*, *Aët. Phil.* 192. the *Piper odoratum Jamacense nostratibus*, *R. Hist.* 2. 1507. *Piper Caryophyllatum*, *Piper Jamaicense*, *Mont. Exot.* 9.

Caryophyllus aromaticus Americanus Lauri acuminato folio fructu orbiculari, *Pluk. Alm.* 88.

It is an orbicular Fruit, with a dusky, rough, hard, umbilicated Rind, containing within it two black Kernels, of an aromack Smell and Taste approaching to that of Cloves, and partaking in some degree of that of all the other Spices beside, which occasioned our calling it *All-Spice*.

The Tree which produces it rises to thirty or forty Foot high; the Leaves are like those of the Bay, and very aromack; the Flowers stand in Bunches, and are greenish, and composed of four Leaves bent backwards; these are succeeded by the Fruit, which the Negroes gather before it is ripe and dry it in the Sun; they become wrinkled and brown in the drying, tho' they were smooth and green while gathered. The Tree grows in hilly Places in the north Part of *Jamaica*.

It is an admirable Aromack, and its Oil, by Distillation, is a very excellent one, and sinks in Water like Oil of Cloves.

CHAP. XI.

Of the Root Nisi, or Ginseng.

G I N G - G I N G is a Plant to which *Pomet.* the *Chinese* have given this Name because it has the Figure of a Man opening his Legs, for they call a Man *Ging*; its Root has a good deal of Resemblance to the Mandrake Root, but that it is much smaller, and its Leaves shew very plainly that it belongs to another Class of Plants. *Father Martin*, indeed, who had seen nothing but the Root, makes it a Species of the Mandrake, in the Description he has given in his Atlas of *China*; but the Reason of his falling into that Error, was his not having seen the Leaves, as he himself says. This Root becomes yellowish in drying; it has neither Fibres nor Filaments adhering to it, by which to draw Nourishment; it has a number of small black Veins scattered all over it, and looking like so many Lines curiously drawn on it with Ink; when chewed it is disagreeable, its Taste being a Sweetness mixed with Bitter.

It greatly encreases the vital Spirits, in a Dose not larger than two Scruples; in a something larger Dose, it recovers Strength to People who are weak, and gives an agreeable Warmth all over the Body. They use it after a Preparation in *Balneo Mariæ*, which gives it an agreeable aromack Smell: Those who are of a hot and robust Constitution endanger their Lives if they take too largely of it, because of the vast Effervescence it raises in the Spirits; but it does even Miracles for the Weak

Weak and Feeble, and those whom long Illness, or any other Accidents, often exhaust of their Strength. It restores in such a manner Strength and Spirits to People who are dying, as to give Time for other Remedies to cure them, and in China is worth three times its Weight in Silver.

The *Siam Journal*, speaking of the Root *Nisi* or *Ginseng*, says it is a small Root which grows in China, in the Province of *Houn-amsout-chouan*, and that of *Couli*, and is not to be found in any other Part of the World: Its great Effects are the rectifying the Mass of Blood, and giving Strength and Spirits to those who have lost them. The manner of taking it is this, they boil some Water, and throw into it the Root cut into thin Slices, and then cover the Vessel and leave the *Ginseng* in Infusion; when the Water is but just warm, they drink it alone; this they do in the Morning fasting: The *Ginseng* they take out, and keep it to use again: At Night they boil more Water, but only half as much as they did before, and put the same *Ginseng* in again, covering the Vessel as before; and when it is cold they drink it. After all this, they dry the *Ginseng* in the Sun; and if there is Occasion it serves them a third Time infused in Wine. The Quantity of *Ginseng* put in is according to the Age of the Person it is for; for Persons from ten Years old to twenty, they use each Time the Quantity of half a Soang; and from thirty to sixty, seventy, or upwards, the Quantity of a Mayon; and more than this they never take.

C H A P. XII.

Of Birds-Nests.

Pomet. **T**HESE Nests are found principally in *Cochin China*; they are excellent in Sauces, and good for the Health; when they mix the *Ginseng* with them, they take a Fowl whose Flesh and Bones are black, they gut it and clean it carefully; then they take some of these Nests, which they soften with Water, and part into small Threads; they then cut some *Ginseng* into small Pieces; and mixing all together, put it into the Body of the Fowl; they then sow up the Fundament, and put the Fowl, thus prepared, into a China Vessel, close covered, which is put into a Pot of Water, and set on the Fire to boil: They keep this Pot of Water boiling, till the Fowl in the Vessel within is enough; and after that, leave all together on the Remainers of the Fire all Night: In the Morning they

take out the Fowl and eat it, *Ginseng*, Nests, and all, without either Salt or Vinegar; and when they have eat it up, they cover themselves warm, and commonly get into a Sweat.

Rice may be also eaten boiled in the same manner in Water with the *Birds-Nests* and *Ginseng*: This they eat at Day-break, and, if they can, sleep after it.

C H A P. XIII.

Of Sowbread.

SOWBREAD, so called because *Pomet.* Hogs are very fond of it, is a large, thick, round Root, of a dusky Colour without, and white within; hung round with blackish Fibres. It contains a great Quantity of Oil and essential Salt. It grows in Woods and in watery Places.

Chuse this Root new, and well fed: It is emetic, cathartic, and resolvent; but is not much used except externally, or as an Ingredient in certain *Galenical* Compositions, as Ointments, Plasters, and others.

Sowbread, called *Cyclamen orbiculato folio interne purpurascete* by *Tournefort*, *Lemery*, and *Cyclamen Autumnale vulgare folio rotundo* by *Parkinson*, is a Plant whose Leaves are roundish, of a greenish Brown, spotted with White on the upper side, and purplish underneath, standing upon Pedicles; among these there rise long tender Pedicles, which carry purple Flowers of an agreeable Smell; when they are fallen, they are succeeded by spherical membranaceous Fruits, which open in several Places, and contain angular Seeds.

The Root of it, which is large and thick, is what is used in Medicine: It is incisive, detensive, attenuating, and aperient; proper in the Stone and Obstructions, to bring away the Afterburthen, and to dissolve hard Swellings. It is used both externally and internally.

Great Care must be taken in drying it, else it will shoot, and even flower, when laid up for Use.

[This is the Root of the *Cyclamen orbiculato folio*, *Ger.* 694. *Cyclamen vulgare folio rotundo*, *Park. Parad.* 198. It is kept in Gardens, and flowers in *September*.

It is an Errhine, and, internally, has been known to do Service in Obstructions of the Menses, and other Cases of a like Nature, but at present is scarce ever used or kept in the Shops.]

C H A P. XIV.

Of the Rose of Jericho.

Pomet. **T**HE *Rose of Jericho* is not a Flower but a very small Shrub, which throws out several Branches to the height of about four Fingers; they are woody, of an ashy Colour, and divide afterwards into a multitude of Branches entangling themselves one within another, and throwing themselves together toward the Top in the Form of a Globe; its Leaves are an Inch or an Inch and half long, and half an Inch wide, cut at the Edges, and covered with a hairy Down; its Flowers are small and white, and set as it were in Clusters; its Seeds round, reddish, and of an acrid Taste; and its Root single, large, and woody.

It is brought to us from *Arabia Desart*. I shall not trouble the Reader with the many Things which some Authors have diverted themselves with observing in regard to this little Plant, leaving the farther Accounts of it to the Curious, as it has no Use in Medicine.

The *Rose of Jericho*, called *Rosa Lemery*. *Hierachuntia* by *Caspar Bacchine*, and *Rosa de Hiericho*, and *Rosa Mariæ Monachis* by *Lugdunensis*, is a little Shrub in the Figure of a Ball as brought to us; but this it acquires in drying, for, while it is growing, its Branches are separate from one another, but as it dries, the Branches entangle one within another, and their Extremities bending inward meet at one common Centre, and form of the Whole as it were a little Globe or Ball. It grows in *Arabia Desart*, in sandy Places, and on the Banks of the *Red Sea*, from whence we have it; and though its common Name be *Rose of Jericho*, it is not a Rose, nor is it found any where near that Place. It has been believed heretofore, that it never opened itself but on *Christmas-day*; but we now are very sensible, that it will open at any time if it be put into Water, and suffered to remain there some little time, the Branches expanding by little and little, and affording a very pleasing Sight: And when it is taken out of the Water, it dries and shuts itself up again as before.

It may serve for an Hygrometer; for being dry, it is very susceptible of the Impressions of the Humidity of the Air; so that in a dry Season it will be shut up closely, but as it becomes more or less wet, it will extend or expand itself: This may be the more easily perceived when it is exposed to the Air, than when kept in a Chamber.

As to its medicinal Virtues, it is esteemed good for the Scurvy, when taken in Powder or Infusion, but I have never known it tried.

[This little Plant is the *Thlaspi Rosa de Hiericho dictum*, *Histor.* 328. *Rosa Hierachuntea vulgo dicta*, *C. B. Pin.* *Rosa Hierachontea*, *Lobel.* It is about four Inches high, the Leaves are like those of the Olive, standing singly at every Joint; the Flowers stand in the setting on of the Leaves, and are of a greenish White, and consist of four Leaves; each of them is succeeded by a single Capsula, containing Seeds like those of the other *Thlaspi*. In drying the Leaves generally fall off, but the Pods are frequently seen very fair among the dried Stalks.

The Experiments *Pomet* mentions Peoples diverting themselves with about it are, its expanding in warm Water, which indeed is a very agreeable Sight.

It is of no Use in Medicine, and seldom kept in the Shops, but common in the Collections of curious Persons.]

C H A P. XV.

Of Gum Guaiacum.

IN the Chapter of *Guaiacum* Wood we *Pomet.* made some mention of this Gum, but to what was there said it is necessary to add, that, to distinguish it from *Colophony*, it need only be put to a Candle, or into the Fire, for, on burning, it yields an agreeable aromack Smell. This Gum is brought to us from the *West-Indies*, and ought to be in handsome Pieces, of a blackish or greenish Colour, transparent, and of an agreeable aromack Smell.

It is sudorifick, vulnerary, and anodyne, taken inwardly from a Scruple to a Dram, mixed with an equal weight of Sugar-candy: It is also good in Difficulty of Breathing, and in Astmas; in which Cases it is common to add to it an equal Quantity of washed Sulphur, and mix them together into a Bolus with Syrup of Coltsfoot, and give them in the Morning for eight Days successively, or longer if necessary; in short, according to the Obstinacy of the Disease, or Orders of the Physician.

Gum Guaiacum is to be chosen clean, *Lemery.* shining, and transparent, of a reddish brown Colour, brittle, of an acrid Taste, and agreeable aromack Smell when bruised or put to the Fire.

It contains a great Quantity of essential Salt and Oil.

[This

[This is the Gum, or rather Refin, of the *Guaiacum* Tree, described in its proper Place: It flows either naturally from the Clefts and Cracks in the Bark, and is then in Tears or single distinct Drops, or by Incision, by which means it flows in much greater abundance, and is suffered to run into large Cakes of an irregular Shape. It is a noble Medicine, but so subject to Adulteration, that there is scarce any depending on it; that in Tears, however, is almost always genuine.]

C H A P. XVI.

Of the precious Boar-stone of the East-Indian Wild Boar, and the Malacca-stone, or Porcupine-stone of the Indies.

Pomet **T**HE Boar or Hog-stone, which the *Hollanders* call *Pedro de Porco*, and which the *Portuguese*, who first brought it into *Europe*, call *Pedro de Vassô*, or *Piedra de Iuerco*, is a kind of *Bezoar* found in the Gall of the Wild Boars of the *East-Indies*. This Stone is generally of the bigness of the Hazel-nut, or of the End of ones Finger, of different Figures and Thicknesses; but its general Colour is that of the *Toulon* Soap, that is, of a White with some cast of Greenish in it; and it is soft in handling.

These Stones, however scarce, are yet to be found in the Collections of the Curious. The Scarcity of it is so great, that in the largest Sales of *East-India* Drugs at *Lisbon* and *Amsterdam*, there are seldom above three or four of these Stones.

The *Indians* call these Stones *Masheba de Soho* in their Language, and have a great Esteem for them on account of their Virtues against Poison; and the People of the Kingdom of *Malacca*, where they are mostly found, prefer them to the true *Oriental Bezoar*, though among the other *Indians*, that is esteemed the best Antidote in Nature.

The *Pedro de Porco* is very scarce among the Merchants of *Holland*, and much more so among ours; whether it be that it is scarce in the *Indies*, or whether the Natives keep it among themselves for their own Use, not only as a Preservative against Poisons, but also as a sovereign Remedy against the Disease they call *Mordoxi*, which they are subject to from an irritated Gall, and which is as dangerous with them as the Plague in *Europe*.

When any of these Stones are brought into *Holland*, they sell there for three or four hundred Franks apiece, and sometimes more; but the wealthy Merchants most frequently keep them in their own Hands, either to make Presents to People

of Quality, or to use themselves. They are generally set in a round gold Box pierced full of Holes, with a Chain of Gold fastened to it to hold it by upon Occasion.

There are some Families of Consequence in *Holland* who preserve this Stone, and have it from Father to Son for many Generations; and it serves all their Friends and Acquaintance when they have Occasion. The principal Use of it among them is to cure Children in the Small-pox.

Many other Virtues are also attributed to it, against Fevers, and most of the Womens Complaints. The *Indians* have that Confidence in it, that they think it is sufficient to touch it, to have Relief in all their Illnesses. Women with Child, however, are not to meddle with it for fear of Abortion.

When this Stone is to be used, it is held a little while suspended in a Glass of Wine or Water, to which it communicates its Virtues, with some degree of Bitterness, not altogether disagreeable; this is to be drank in the Morning fasting, but may be taken at any Time on pressing Occasions.

Beside the *Pedro de Porco*, there is another Stone, generally called the *Malacca-stone* or *Indian Porcupine-stone*, because it is almost only in this Kingdom that they are found. Most People confound the *Pedro de Porco* with the *Malacca-stone*, because of the great Resemblance they have to one another, which I am certain of by that which I have in my possession, which only differs from the *Pedro de Porcos* in Bigness, and in that it is something more scaly, like the *Bezoar* and other such Stones. These Stones are found, but very scarcely, in the Gall, Stomach, and Head, of the Porcupines of the *East-Indies*.

This, as well as the *Pedro de Porco*, is often made a Present to Great Persons in the Kingdom of *Malacca*, as also to Foreign Princes and Ambassadors. *Garcias* relates, that in his Time the Viceroy of the King of *Portugal* in the *Indies* kept by him one of these Stones, which had been presented him by the then King of *Malacca*: From which we may learn what Esteem those Nations had for this Stone. This is the first kind of the *Malacca-stone*.

There is also another, which *Mr. Tavernier* mentions, and which is found in the Head of the Porcupine: But as I have never seen one of these, I shall forbear saying any thing farther about them.

After the *Oriental* and *Occidental Bezoar*, may be reckoned a third kind, *Lemery*, called *Bezoar Porci*, *sive Lapis Porcinus*: It is taken from the Gall of the Wild Boar, in *Malacca*,

Malacca, and some other Parts of the *East-Indies*. It is commonly whitish or greenish, but sometimes of other Colours; about the bigness of a Nut. The *Indians* have it in great Esteem in the Disease they call *Mordaxi*, as also in the Small-pox, Malignant Fevers, Hysterical Affections, and Suppressions of the Menfes.

[The *Pedro de Porco* and *Malacca-stone* are really but one and the same Thing, and that not found in the Boar but in the Porcupine. The different Size and Colour of the Stone, and the mistaken and afterwards right Accounts of what Creature it was taken from, have occasioned the Error of making two different Stones of it.

It is the *Bezoar Hystricum*, *Lapis Hystricis*, *Lapis Malacensis*, *Lapis Porcinus*, *Mont. Ex. 5.* *Lapis seu Pila Hystricis*, *Ind. Med. 45.* It is found in the Gall-bladder of the Porcupine in *Malacca* and other Parts of the *East-Indies*, where that Creature grows to the bigness of a Pig of eight Months old, and is called by the Natives *Balatnamentinie*, *Hystrix*. *R. Syn. An. 206.* *Jonsf. de Quadrup. 119.* *Charlt. Ex. 19.* The Stone, as it is called, is rather of the *Ægagropilus* than *Bezoar* kind, being neither so hard, so firm, nor so heavy, as the true *Bezoars*, nor of the same regular laminated Structure. Its Virtues, though so highly extolled by the Natives and Merchants, and others who had them of them, are very much doubted by Men of Science: It is, however, of no great Consequence, whether they are real or imaginary, as it is too scarce ever to come into Use in the Shops.]

C H A P. XVII.

Of the Serpent-stone.

Pomet. **T**HE *Serpent-stone*, which the *Portuguese* call *Cobra De Capello*, is found in the Head of a Serpent so called, because he has on his Head a little Eminence in the form of a Hat. They say there is no Remedy so sovereign as this Stone against the Bites of venomous Beasts, for if put upon the Wound, it fastens itself strongly on, and draws out the Poison, of which, when it is full, it falls off again of itself, having no more Power to stay on; but if it be thrown into Milk, it discharges there the Poison it had imbibed, and recovers its former Virtues. Father *Kircher* says, that it was a long time before he would believe this, though he found it affirmed by Authors of Credit as a certain Truth, but that he was at length convinced of it, by an Experiment which he himself made of it, in the Presence of many Persons, on a Dog bitten by a Viper.

This Account is also confirmed, by a Relation sent to the Prince *John Frederick* Duke of *Brunswick* and *Lunenbourg*, to whom all the Men of Learning in his Time sent Accounts of what new Discoveries they made, not only because he was curious, but because he was a Master in most of the Sciences. *Tachenius*, in a Letter which he wrote from *Venice* on the 27th of *April* 1688, acquaints that Prince, that desiring to make an Experiment in Tryal of the Virtues of one of these Stones which an *Armenian* had brought to *Venice*, he caused a Dog to be bitten in the Leg by a Viper; half an Hour afterwards, when they perceived by the Howlings of the Creature, and the swelling of the Limb, that the Poison had spread itself into the Veins, and caused the Creature great Pain, the Count *De Schlick*, before whom the Experiment was made, applied the *Armenian's* Stone to the Wound, and immediately it fixed itself so firmly on it, that there was no pulling it off: And upon this, the Creature ceased his howling. The Stone remained fixed in this manner on the Wound two Hours, at the end of which Time it fell off of itself, and was put into some Milk, which it impregnated so strongly with the Poison, that a Dog that drank of it died the Night following.

It was then placed again upon the Wound; it fastened itself again as before, but remained on now only half an Hour, and then fell off: Being again put into more Milk, it communicated the Poison to it also, but in a smaller degree; for at the Time of his writing that Letter, it was three Days since another Dog had drank of that second Milk, and he was then living, and there appeared Hopes of his recovering entirely.

It was, after taking out of the second Milk, applied a third Time to the Wound, but did not then fasten itself at all, there being then no Poison remaining in it.

Mr. *Tachenius* adds, that the Stone was round, black, of the bigness of a *French Sol*, but four times as thick; and that the *Armenian* said, it not only cured the Bitings of mad Dogs and venomous Beasts, but was also a sovereign Remedy against the Plague.

There are two kinds of the *Serpent-stone*, the one natural, the other sacitious; the natural Stone is found in the Head of a large Serpent very common in *Melinda*. As I never have been able to get one of these natural Stones myself, I shall here relate what Mr. *Tavernier*, the only Author I can find who has given a circumstantial Account of these Stones, has said of them.

“ There is a kind of Stone, says he, which they call the *Hat-Serpent-Stone*; this is a particular
“ kind

“ kind of Serpent, which has in reality a kind of
 “ Hat or Hood hanging down behind his Head;
 “ and it is behind this Hood that these Stones are
 “ found, the least of which are of the bigness of
 “ a Hen’s Egg. These Stones are found in none
 “ of these Serpents that are less than two Foot
 “ long; and if they encrease in Bulk as the Crea-
 “ ture grows, there must of necessity be some of
 “ an enormous Size; for in *Africa* and *Asia* these
 “ Serpents are sometimes seen five and twenty
 “ Feet long, as that was, the Skin of which is
 “ preserved at *Batavia*, which had swallowed a
 “ Girl of eighteen Years of age.”

The same Author observes, that this Stone is not hard, and that when struck against another Stone, it throws off a kind of Slime, which being moistened with a little Water, and drank by any one who has any kind of Poison within him, has the Virtue of expelling it in a Moment: That these Stones are not to be had but by means of the *Portuguese* Seamen or Soldiers who return from *Mozambique*. It is not of this Stone, however, that I intend to treat in the Remainder of this Chapter; but of that which makes so much Noise in the World, and of which so many extraordinary Virtues are boasted, and which, though most People imagine to be a natural Stone, is really factitious, as will be seen by the Sequel of this Chapter.

Now I have shewn the high Esteem in which this Stone is held, and the different Sentiments of different People about it, I shall add, that we are not to believe this Stone to be natural but factitious; and for the Proof of what I affirm, I shall add here an Account of what it is composed of, that those who are desirous of having it may make it themselves, as I have done by several which I have now by me.

Take *French* Bezoar, one Ounce; Powder of Toads and of the Crayfish, prepared in the Month of *June*, of each half an Ounce; of Seal’d Earth, prepared in a Decoction of *Scorzonera* and *Contrayerva* Roots, one Ounce; Mineral Unicorn, one Ounce; reduce all these to a fine Powder, and make them up into a Paste with the Jelly of Vipers made with a Decoction of *Contrayerva*, *Snakewood*, or *Virginian* Snakeroot, and form it into Troches of the bigness of a *French* Farthing, and of the same thickness; they may be made larger or smaller at pleasure, but the *Indians* generally make them of about this size.

This then is the so much renowned *Serpent-stone*. Besides the two Accounts already given of its Virtues, the following is what *Mr. Tavernier* has written of it.

“ Finally I shall speak of the *Serpent-stone*, which
 “ is about the bigness of a *French* Farthing, and
 “ sometimes of a somewhat oval Shape, thick in
 “ in the Middle, and growing thinner towards the
 “ Edges. The *Indians* say they are formed on
 “ the Heads of certain Serpents; but I am rather
 “ of opinion, that it is the Priests of these Idola-
 “ ters who make them believe so, and that the
 “ Stone, as they call it, is really a Composition
 “ which they make of some Drugs. But be that
 “ as it will, the Stone has admirable Virtues in
 “ extracting the Poison of venomous Bites: If the
 “ Part where the Bite is be not much torn, an
 “ Incision must be made in it, that it may bleed,
 “ and afterwards, when the Stone is applied to
 “ the Wound, it fastens itself on, and never drops
 “ off till it has imbibed all the Venom from the
 “ neighbouring Parts. To cleanse it afterwards,
 “ they take Woman’s Milk, or in want of that,
 “ Cow’s Milk; and after the Stone has been laid
 “ in it ten or twelve Hours, it takes in all the
 “ Venom the Stone had imbibed, and becomes
 “ of the Colour or the Matter of an Impostume.
 “ Having one Day dined with the Archbishop of
 “ *Goa*, he took me into his Cabinet of Curiosi-
 “ ties, where he had many curious Things; and,
 “ among others, he shewed me one of these
 “ Stones, and telling me its Virtues, added, that
 “ it was but about three Days before, that he
 “ had seen the Experiment made with Success,
 “ one of the People who was with him in a Jour-
 “ ney having been bitten by a Serpent, and cured
 “ by it. I have bought several of them, and
 “ there are none but the Bramines who sell them,
 “ which makes me believe they make them. There
 “ are two Ways of trying whether these Stones
 “ are good and not adulterated; the first is, to
 “ to put them in the Mouth, for if they are good,
 “ they immediately rise and fasten themselves to
 “ the Palate; the other is, to put them in a Ves-
 “ sel of Water, and immediately, if they are not
 “ adulterated, the Water begins to boil, little
 “ Bladders arising from the Stone at the Bottom
 “ to the Surface of the Water.”

The *Serpent-stone*, *Lapis Serpentis* in *Latin*, is a flat Stone, sometimes oval, *Lemery*. but commonly roundish, thick in the Middle and thinner at the Edges, soft, and of a blackish Colour. Many Authors affirm, that it is found in the Head of a particular Species of Serpent; but the more modern Opinion is, that it is a Composition of several Drugs: But be that as it will, it is at present much esteemed in many Places.

It is a Remedy against the Poison of venomous Bites.

Bites, fastening itself to the Wound by means of the Blood about it; and for that Reason, if there is no Blood about it from the Bite, it is necessary to make an Incision about it with a Lancet, and with the Blood that comes from that, the Stone will fix itself; and as it is an Alkali and Absorbent, it naturally imbibes the Poison from the Wound, on which the Pain ceases. It falls off of itself when the Blood is dry, and furnishes no more glutinous Matter to hold it on, and when it has imbibed the Acids of the Wound is encreased in Weight. After washing it in Milk, it is applied to the Wound again, where it fastens itself not so firmly as before, because there is less glutinous Matter to hold it, because it is less alkaline, and because there is less acid Matter in the Wound to hold it there. They continue washing and applying it again to the Wound till it will not stick on any longer at all; which is looked on as a Proof that all the Venom is drawn forth and the Person is cured.

The Virtues and surprising Effects of this Stone are attested by those two great Naturalists, *Kircher* and *Mr. Boyle*, who both affirm, that they have seen it tried. I wonder it has not yet been tried on the Bite of a mad Dog, to see whether its Virtues would exert themselves as powerfully in that as they are said to do in other venomous Bites.

This Stone is also taken inwardly; they use such small Pieces of it thus as are not fit for the external Application. They infuse it in Water, and take it to resist Poison.

[There is a great Diversity in the Opinions of the Learned about this Stone, as it is called, some affirming it to be natural, others factitious; some affirming the Certainty of its Effects, others doubting and denying them: But to set all right, it is to be observed, that there certainly is both a natural and a factitious kind of it, the natural is the *Os Capitis* of the *Cobras de Capello Lusitanis dictus*, *Garc. Serpens Indicus coronatus diademat seu conspicio insignitus*, *R. Syn. An. 330. Vipera Indica vittata gesticularia. Cat. Mus. Ind.* This is of a deep shining Brown, and marked at certain Distances with little Holes; and the factitious is made of calcined Bones and argillaceous Earth, and is firmer, heavier, and smoother on the Outside; hence it is not wonderful if the Descriptions of Authors differ, who were perhaps describing different Things; or if the Experiments of some succeeded, and those of others did not; when some made them with the natural Bone, and others with the factitious. The factitious are of various Sizes, Shapes, and Colours, as some of them have been made by Persons who never saw

one of the natural ones; and others by those who have fashioned them exactly according to a natural one, which they have kept as a Pattern. I remember to have once seen two of them in the Hands of a Person who traded in Rhubarb and some other Drugs from the *East-Indies*, the one of which was as big as a Wallnut, of a dusky Colour, and seemed an argillaceous or cretaceous Earth; and the other black and polished, which seemed made according to the nicest of all the Adulterations of it, of the Bone or Horns of some Animal burnt to a Blackness. The true and natural one I never yet saw.]

C H A P. XVIII.

Of the Fossil or Mineral Unicorn Horn.

IT is not without Reason that the *Indians* make this Stone an Ingredient in the *Snake-stone* before treated of; however, as it is a Drug so little known, and of which so few Authors have written, I shall add here what *Wormius* has written of it, that Physicians may know it, and bring it into Use.

The *Fossil Horn*, called *Ceratites* by *Gerner*, *Fossil Ivory* by *Clusius*, *Arabian Stone* by *Cisalpinus*, by some *Petrified Elephants Tooth*, and by others *White Steinmark*, has had all these Names given it by Authors, according to the various Forms it has in different Places appeared in.

It has great Affinity to some of the Kinds of *Osteocolla*, and has therefore by some been placed among the softer Stones.

It is a stony Substance, sometimes resembling a Horn in its Colour, Smoothness, and Shape; sometimes harder, sometimes softer, covered with an outer Crust, which is yellowish, black, or ash-coloured, and very hard, and filled within with a soft, white, light, friable Substance, compact and without Pores, astringent to the Taste, and drying, sticking firmly to the Tongue, and of an agreeable Smell: It is found in *Italy*, and many Parts of *Germany*, *Moravia*, *Silesia*, and *Saxony*.

Boetius gives this Account of the Matter and original Formation of it. "I take, says he, the
"productive Matter of these Horns to be a Marl
"of some kind, which is dissolved in the Bowels
"of the Earth by subterraneous petrifying Waters,
"and flows like Milk through the Cavities of the
"Earth, in which, if the adventitious Water be
"absorbed by the circumjacent Earth, or find
"Ways of running separately off, the heavier and
"firmer Parts filling up those Cavities remain in
"them, and coalesce by degrees as the Humidity
"gets

“ gets off, and takes the Form of a Stone or
 “ Horn, or only of a Marble, as before, according
 “ to the greater or lesser degree of petrifying
 “ Power the Water it was dissolved in, was en-
 “ dued with. This is the Reason why some Pieces
 “ of it are found large and thick, others small and
 “ slender. But if this lacteous Humour does not
 “ fall into a Cavity of the Earth, but into some
 “ Piece of Wood already deprived by Time of
 “ its own Juices, and insinuates itself into its light
 “ and porous Substance, and there the more fluid
 “ Parts run off, and the marly remain behind, it
 “ makes an entire Change in the Wood, and as-
 “ simulates all its Parts to its own Substance; yet
 “ leaves it so much of itself, that the Species of
 “ the Wood may sometimes be known, and its
 “ natural Odour yet remain in some degree in it.
 “ What in this System happens to Wood, may
 “ also happen to Ivory, or Stags Horns, or other
 “ Parts of Beasts, if they chance to lie in the way
 “ of this Fluor, and be in a Condition to receive
 “ it into their Pores.”

This Hypothesis seems entirely conformable to Truth, for the Virtues of this fossil Horn are the same with those of Marls, Boles, and Seal'd Earths; and what others imagine of the Horns of Unicorns dispersed into various Places at the Time of the Deluge, and changed into their Texture by Bitumens, stony Substances, Ambers, &c. carries little or no Probability with it.

The *Fossil Unicorn's Horn* is esteemed good in all malignant Diseases, the Plague, Malignant Fevers, and Poisons, like the *Terra Lemnia*; it strengthens the Heart, and preserves it from Malignity, and expels malignant Humours by Sweat: The Dose is a Dram, in Wine or any appropriated Liquor; or in Syncopes, Tremors, &c. a Scruple only, in some appropriated Liquor: It is also said to be good in Epilepsies, to destroy Worms, stay Fluxes and Hæmorrhages of all kinds, and for Runnings of the Eyes, mixed with Milk, and instilled into them; as also, by its astringent and drying Qualities, to bring Ulcers to cicatrize, and to cure Galkings and Burns.

It has, however, been very justly observed, that it is not to be expected that every Piece of this Fossil should possess all those Virtues, as there is a vast Diversity between different Pieces of it; and as they differ plainly in Form, Origin, and Substance; they very well may be supposed to differ also in their Virtues.

Such of them as are hard like a Stone, and have no internal softer Parts, nor any Smell, have scarce any other Virtues than merely those of drying. Such a Piece I have in my possession, which

is hard as a Stone, solid, heavy, and carrying the Appearance of a piece of Ash-wood; for the Veins, Striæ, and Laminæ it is composed of, are so marked with Knots and knotty Foramina, that it plainly has the external Appearance of a piece of Ash; for which Reason I have chosen to range it among the petrified Woods, rather than the fossil Horns. It has no Smell, nor any astringent Virtue.

Those which have the Virtues before mentioned, are such as are easily reduced to Powder, are soft, and adhere to the Tongue; and particularly, those which have an agreeable Smell are commended for Cardiacs, to strengthen the Heart, and defend it from Malignity. If the Substance of them before the Transmutation was a Part of the Stag or Elephant, or of the Ash or Walnut Tree, or any other Matter good against Poisons, this Fossil then possesses the Virtues of expelling and resisting Poisons; and the more so, if the Smell of the transmuted Substance be yet perceivable in it, as the Virtues of the original Substance are then judged not to have perished, and to be greatly exalted and improved by the adventitious Matter.

Some Fragments of this kind I have by me, one, of the thickness of an Arm, three Inches long, and two and a half in diameter; the external Coat of which being taken off, the internal Substance is very white, staining the Hands white in handling it, with blue and brownish Veins running longitudinally in it, adhering to the Tongue, and resembling burnt Hartshorn: This is of the weight of five Ounces, and I judge it to be of the best kind.

Another kind I have, which is of an Ash-colour, more compact than the former, but soft, and of an agreeable Smell, looking like burnt Hartshorn, and very astringent.

A third in my possession is brown, its external Coat tending to Blackness, something harder than the other, but yet easily scraped with a Knife, light, astringent, and not so brittle as the other: This much resembles burnt Ivory.

Another brown one I also have, but marked with black, white, and yellow Veins, running longitudinally; this is of the length of a Finger, weighing five Drams; it is brittle, sandy, like some kind of Wood, of an agreeable Smell, and strongly astringent: This also I judge to be of the better kind. So far *Wormius*.

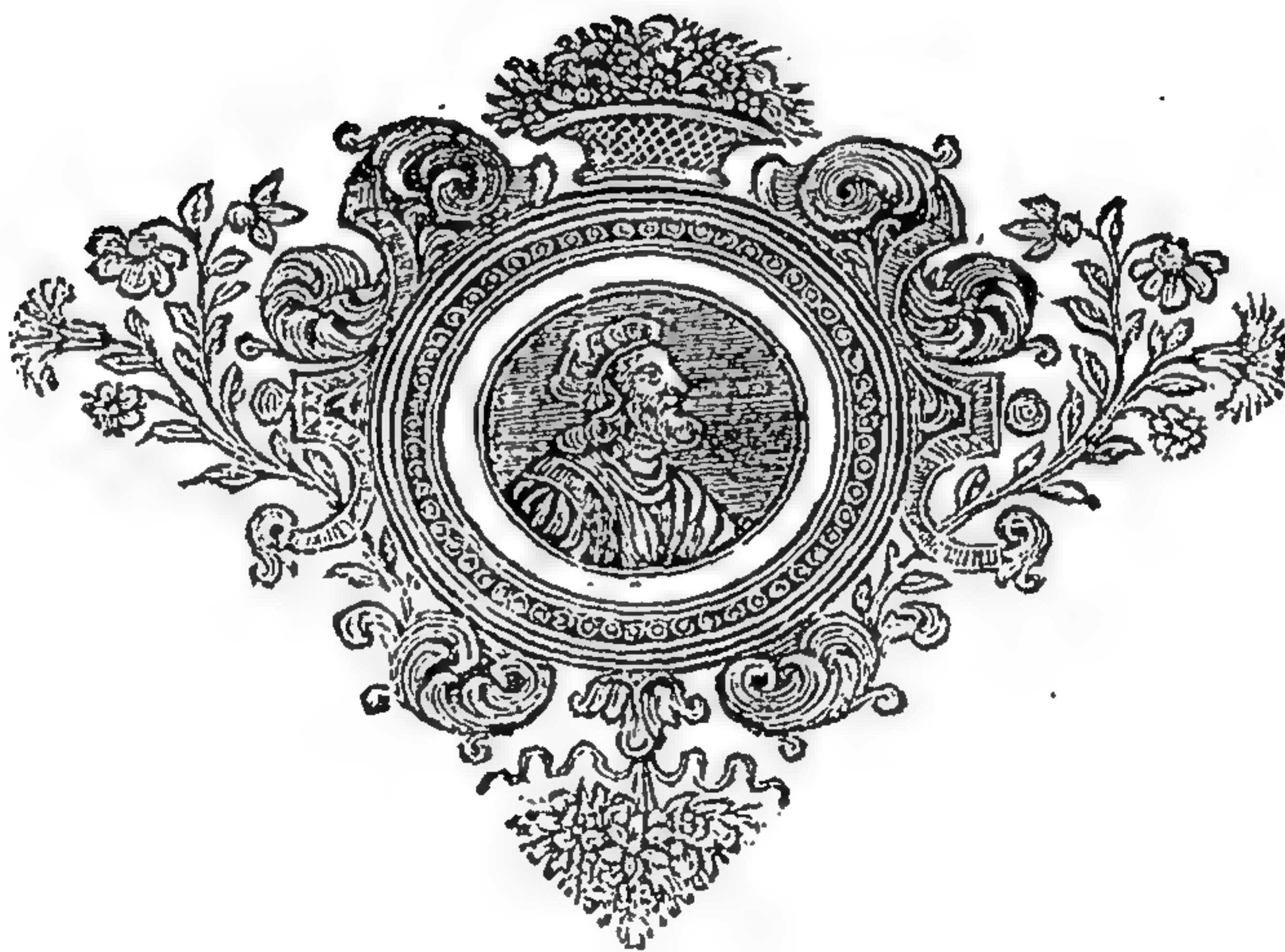
This Fossil gives me Occasion to speak of a white Earth, which is found on the Side of the Seigniorie of *Moscan*, belonging to the Elector of *Saxony*, which the Inhabitants of the Place use to make

make Bread, mixing it with Wheat or other Flour: It is also found at *Gironne* in *Catalonia*. It is this white Earth which is commonly called *Steinmark*, or *Medulla Saxorum*.

It is to be observed, that they do not use all this white Earth to make their Bread with, but only certain little Protuberances, white, and like Meal, which throw themselves out of that Earth when the Sun has heated it.

[This is the *Unicornu fossile*, *Boc. Mus.* 62. *Cornu fossile*, *Charlt.* 23. *Cornu fossile vulgo Monocerotis Cornu*, *Boet.* 425. *Geratites*, *Ald. Mus.*

Met. 63. *Gens. Lap.* 154. *Ebur fossile*, *Clus.* *Exot.* 168. *Lapis Arabicus*, *Cæsalp.* 611. It is often dug up in the Form of Bones and Teeth, particularly of the *Dentes molares*, in which one may perfectly distinguish between the Root of these Teeth and that Part of them which was above the Gums; which makes it unquestionable, that they are really Petrifications. *Wormius* has very judiciously distinguished the Kinds of most Virtue, but at present none of them are used or kept in the Shops.



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